



A MONTHLY JOURNAL DEVOTED TO THE ELEVATOR AND GRAIN INTERESTS.

PUBLISHED BY  
MITCHELL BROS. COMPANY,  
(INCORPORATED.)

VOL. VII.

CHICAGO, ILLINOIS, AUGUST 15, 1888.

No. 2.

SUBSCRIPTION PRICE,  
ONE DOLLAR PER ANNUM.

## THE ELEVATORS OF ST. LOUIS.

The elevator known to the agricultural and commercial world has, like many other modern conveniences, become a necessity, for it fills a place peculiarly its own. As early as 1860 Armour, Dole & Co. of Chicago, and the Smith Dock Elevator Co. of Milwaukee, erected the primitive institutions by that name in those respective cities, but they were operated by the old English method, and ascending and descending tubs were used in loading and unloading. When one tub was coming down the other was going up, like the old-fashioned well bucket, and so it then required two weeks' time to do the work which can now be easily done in one day by modern appliances. In 1864 a man named McMaster came to St. Louis from

Rock Island, and began to use his influence among the merchants and business men to get them to take stock in an elevator. There were a few friends of the enterprise, but the sentiment against the project was strong and there was much to overcome. Mr. McMaster was persistent, and the company was at length organized on a subscription stock of \$180,000, taken in small quantities from \$500 to \$1,000. An application was made to the municipal assembly for a charter, but it was refused, although the company had already bought ground where the present St. Louis Elevator now stands, above the Eads Bridge. Mayor How was then the chief magistrate of the city, and A. W. Fagin was president of the council, and acting mayor in the absence of that functionary. It so happened that the mayor was absent one day from the city—as mayors sometimes are—and strong influence was brought to bear on acting Mayor Fagin to induce him to sign a bill authorizing the building of the first elevator in St. Louis. Mr. Fagin then, as now, favored any measure that would foster commerce and the growth of the city, and he took the responsibility of signing the bill.

It would be difficult to conjecture how long such institutions might have been kept away from the city but for the absence of the mayor on that day. True it was during war times when the prevailing voice was for war, but the strongest and most powerful objection seems to have emanated from the teamsters and transfer men, who clearly enough saw the doom of their avocations in the more scientific grain bins.

With the elevator soon came the custom of handling grain in bulk, instead of in sacks, which had been formerly handled along the levee at great expense to the commission merchants.

The first elevator was built where the St. Louis Elevator now stands, but it should be remembered that the

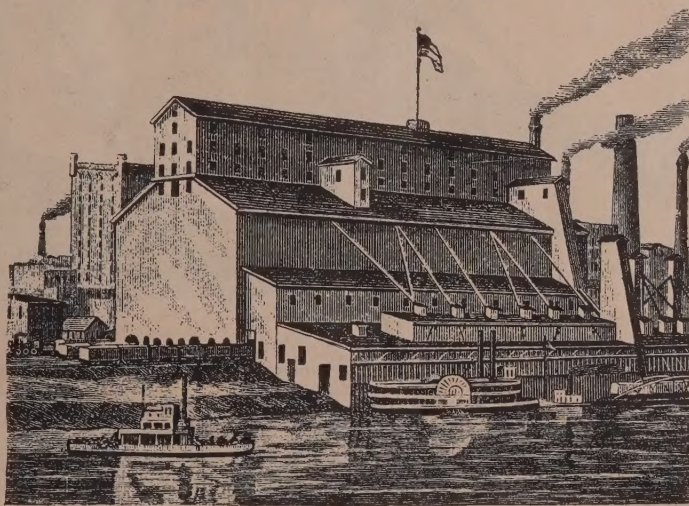
Wabash Railway stopped at North Market street until 1868, the elevator, in the meantime, receiving grain only from the river source. Hon. Nathan Cole, afterward mayor, and son-in-law of A. W. Fagin, became the first secretary of the first elevator, receiving no compensation therefor.

In 1869 the East St. Louis Elevator was begun south of the bridge, the stockholders being Dr. Wm. Van Zandt, James Francisus, now of the Third National Bank, Russell Hinckley of Belleville, J. B. Lovington of East St. Louis, and T. A. Roos, a commission merchant of this city. It was operated with varying success for three years, and then a larger addition was built at a cost of \$150,000. Meantime the immense quantity of grain which reached the city over the Missouri Pacific was be-

the Chicago & Alton Railroad, assisted by St. Louis capital. Then the reaction came, and the results were disastrous to many of the elevators, which were obliged to allow their first mortgage bonds to be foreclosed. Most of these East St. Louis certificates were purchased by St. Louis capitalists, who also soon bought the Advance Elevator and added some 300,000 bushels to its capacity. Not being satisfied with this, they had built what they called a complete elevator on the river front, and connected it, by means of long belt conveyors, with the main elevator on the Ohio & Mississippi track.

In 1882 the Valley Elevator was built, and in 1885, '86, '87 and '88 the Merchants' Elevator has been building and adding to its apartments, until it is now, without doubt, the most complete of any in the city. The money invested originally in St. Louis elevators, together with their respective capacities, is as follows:

Elevator.	Cost.	Capacity.
St. Louis.....	\$800,000	1,300,000
Central (A. & B.).....	450,000	1,300,000
Central (A. & D.).....	400,000	1,500,000
Union Depot.....	350,000	700,000
Merchants'.....	350,000	1,250,000
East St. Louis.....	200,000	650,000
Venice.....	250,000	450,000
Union.....	400,000	1,660,000
Advance.....	400,000	650,000
Valley.....	400,000	800,000
Totals.....	\$4,000,000	10,200,000



THE ST. LOUIS ELEVATOR AT ST. LOUIS.

ing handled by that road in a crude way by the use of a warehouse, which still stands at Broadway and Chouteau avenue. The cars stood all the way from Fourteenth to Seventh street, and were unloaded by hand into wagons, and the grain was carted to the warehouse and again unloaded by hand.

The growth of the elevator business brought into existence the elevator built by Larimore Bros in 1873. It was about this time that discrimination was made in freight rates favoring bulk grain, and drove the sacks out of existence, and thus materially cheapened the handling and the price. Elevators sprung up all over the country, and demands for large facilities were everywhere rife.

About this time the Adams & Armington Elevator was built near the Ohio & Mississippi tracks in East St. Louis. The Venice Elevator was built by Mitchell & Tansey of

system be placed under the general superintendency of one man, which would reduce the expenses several thousand dollars a year. Another step which they would recommend, in fact which they hold must be taken, is the establishment of a competing barge line on the Lower Mississippi. The idea is prevalent that the Mississippi Valley Transportation Co., being the only common carrier to the ocean, will not encourage business in that line beyond its own capacity to carry. It is stated by those best posted in the business that with water transportation from this city to Liverpool, St. Louis can deliver grain in that port at a freight transportation rate which will scarcely exceed the inland charges from Chicago to New York.—*St. Louis Republic.*

A large grain elevator will be built at Tacoma, Wash. Ty.



## THE PAIGE PATENT HORSE POWER.

The illustrations which we present to our readers on this page of the Paige Horse Power for grain elevators represent one of the best known horse powers in general use throughout the great grain district of the Northwest.

Previous to the year 1885 there were comparatively few grain elevators in Northern Minnesota and Dakota, and nearly if not quite all of them were operated by steam power, but during the season of 1885, with the progress of the country and the growing competition among the grain dealers, it was decided to adopt other means of handling grain in the country, and to do so on a more economical basis was at that time quite an important subject of discussion among the elevator people. After a thorough investigation it was decided to use horse powers vs. steam, and as a result the Paige Horse Power was invented. It has been a wonderful success, and is now known to every elevator company, and is in general use throughout the Northwest and in many places in Manitoba. We learn from the manufacturers that there are upward of 500 to 600 of these powers in actual service in Minnesota and Dakota, and that the production since its first introduction amounts to nearly 1,000 machines, which are to be found on every railroad line in the wheat districts of the West and Northwest.

The single gear power is designed for one or two horses, and the double gear power is for heavy service, using four horses when necessary, but it can be operated with one horse to good advantage when business is light. The double gear power is provided with three different and independent speeds from which the operator may drive his elevator machinery, using any or all three speeds at one time should they be desired.

These machines are very strong, durable and light running, and are constructed on thoroughly mechanical principles. They have all necessary requirements for the purposes for which they were designed, and are a flattering testimony to the manufacturers. These machines are exclusively manufactured by the PAIGE MFG. CO., PAINESVILLE, OHIO, and for sale in Minneapolis by G. W. Crane, 239 Fourth avenue South.

## MILWAUKEE MIXED WHEAT.

In regard to the wheat-mixing question, Mr. E. P. Bacon of Milwaukee says: "There is a great misapprehension about mixers' wheat. The mixers take the wheat which comes in here from the country in an unmerchantable condition, clean it up, and if it is necessary to add a little wheat which is above the No. 2 standard, in order to bring it up to the standard, they do it. The fact is they are simply doing what farmers and shippers neglect to do to make the wheat merchantable. A great many country shippers have not the facilities for cleaning the wheat. Wheat when put into the Milwaukee elevators by the mixers is inspected very rigidly, and is not only required to weigh one pound more per bushel than that received by rail, but it is required to be equal in quality in every respect to the average wheat of the same grade which is received by rail. The mistaken prejudice about mixers' wheat has no doubt had influence on the Milwaukee market, but the fact is that when wheat has been shipped to New York and sold side by side with Chicago No. 2 it has invariably sold even with it or  $\frac{1}{2}$  cent to 1 cent per bushel above it. Nine-tenths of the wheat which arrives at Chicago is cleaned and mixed in the same way in the country. The question is often asked why No. 2 wheat at times rules higher at Chicago than here. The fact is it is not wheat that is dealt in, but speculative contracts, nominally for the delivery of wheat

during a specified future month, which contracts are bargained back and forth at the pleasure of operators, their reciprocal cancellation being effected by settlement of differences prior to their maturity, probably in ninety-nine cases out of a hundred. In the markets in which such contracts are dealt in more extensively quotations will naturally rule higher. Operators care but little what relation quotations bear to the real value of the property ostensibly represented by the contracts, their purpose being simply to close them out any moment their supposed interest may dictate."

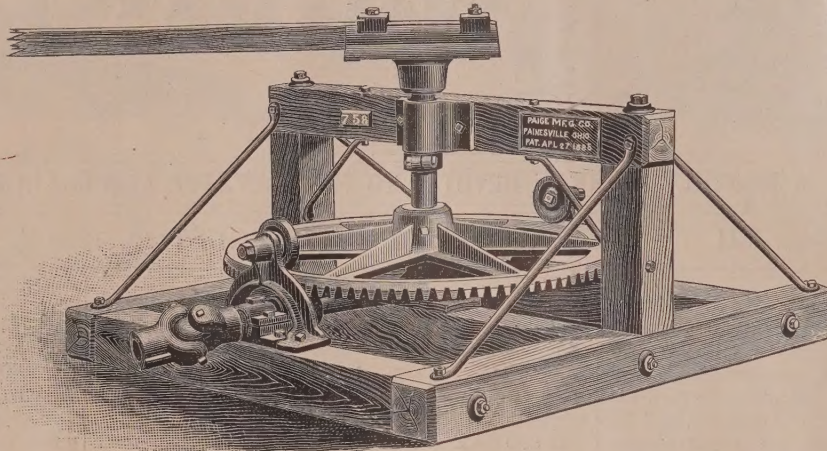
## PUTS AND CALLS.

What puts and calls are is not understood by many people, as was evidenced by some of the articles in the papers of late. The method of dealing in these forbidden luxuries will probably be best understood through a practical illustration. Assuming that the closing price of wheat

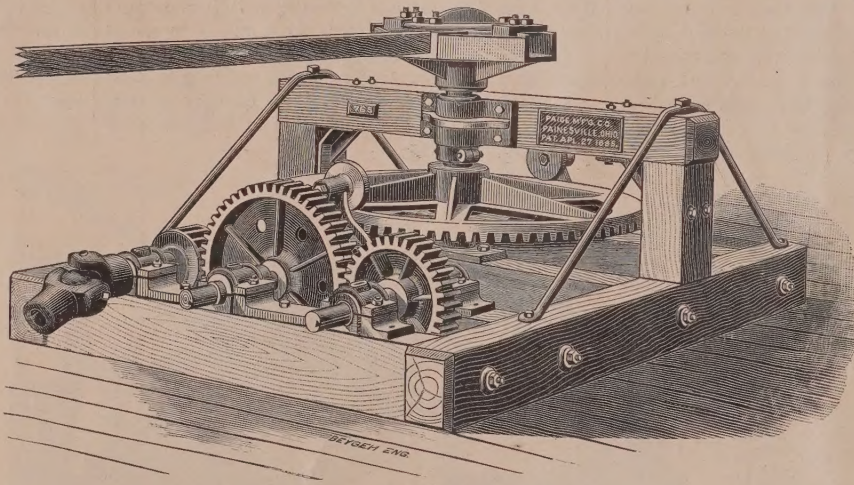
so much the gainer, the privilege being good for nothing and not used. The price set for calls would probably be under the same circumstances,  $80\frac{1}{2}$  cents per bushel, and if on Tuesday the price of August wheat should go to 82 cents, the buyer of the call of 5,000 bushels August wheat will have the right to "call" upon the seller of it for that 5,000 bushels of wheat which the seller of the call is bound to sell to him at the call price,  $80\frac{1}{2}$  cents. The buyer of the call then sells out his 5,000 bushels of wheat at the regular market price, 82c., making by the transaction  $1\frac{1}{2}$  cents per bushel, or \$75 less the \$5 which he paid the day before for the call, and the seller of the call loses just so much. If the price of wheat had fallen or had kept below  $80\frac{1}{2}$  c. all day Tuesday, the privilege would have been worthless, and the buyer of the privilege would simply have lost the \$5 which he paid for it. That is the most simple explanation of the meaning of puts and calls. A put is an option to sell, and a call an option to buy, a certain quantity of grain or other commodity at a certain fixed price within a certain fixed time. The only puts and calls now traded in in Chicago are on grain, and almost all of them are good only for one day, and the price paid for privileges for one day is always \$1 per thousand bushels. Sometimes these privileges are sold good for a week or a month, or even longer time, but rarely, and then the price paid for them varies and the call and put prices are farther from the actual present price, according to the length of the option; for instance, the put price for August wheat would probably be 78c. on puts good for a week and 75c. on puts good for a month and calls might be 82c. and 86c. for the week and month.

In reality the grain is never put or called until the close of the period for which the option is good. For instance, in the above illustration if the price of wheat had fallen to 78c. per bushel in the middle of the session and Mr. Ream had thought that was as low as it would go, he would have bought 5,000 bushels in the market at that price, but he would not immediately have put the 5,000 bushels to Mr. Cudahy at  $79\frac{1}{2}$  c. and taken the profit, because it might happen that before the close of the session the price would advance again to 80c., in which case, by waiting until then, he could sell his wheat in the market at 2c. profit instead of  $1\frac{1}{2}$  c., which would be all his profit if he sold it to Mr. Cudahy at the put price. He has bought the privilege of selling to Mr. Cudahy at any time during the day at that price, so he can lose nothing by waiting, and he may

make something by it, so, of course, he waits. The conditions are reversed in the case of calls, but the conclusion is the same. Therefore, if the market closes within the limits of the put and call prices, the seller of those privileges is safe. He has received his money for the privileges, and that's all there is of it as far as he is concerned. Nine days out of ten the closing price is within the limit at which privileges are sold for the day. It is difficult to give any exact proportion, but it is at least nine times out of ten, possibly nineteen out of twenty, that puts and calls are, as the traders say, "no good," that is, the closing price is within their limits. It would seem, then, that the selling of them must be a profitable business, and it is, but there are chances for great losses. This market has known a drop of 20 cents per bushel in the price of wheat in one day. The man who had sold a put on 5,000 bushels of wheat at near the market price would have realized \$5 from the sale, and would have lost just \$1,000 by having the wheat sold at that put price. Such a thing would not happen more than once in a lifetime, but in less degree might happen any day. In such case the seller of the put would, however, protect himself by selling 5,000 bushels of wheat in the market at near the put price, and his gain on that sale would offset his loss on the other transaction. But even



THE PAIGE PATENT HORSE POWER—SINGLE GEAR.



THE PAIGE PATENT HORSE POWER—DOUBLE GEAR.

for August delivery Monday night is 80 cents per bushel, and that Mr. Beam buys of Mr. Cudahy a put on 5,000 bushels of August wheat good for Tuesday, that means that any time on Tuesday before or after the close of the regular session of the Board, Mr. Ream has the privilege of selling to Mr. Cudahy 5,000 bushels of August wheat at the prices agreed upon between them when the put is sold, and Mr. Cudahy is bound to take the wheat at that price. The price which they agree upon varies with circumstances, but it will be assumed here that it is  $79\frac{1}{2}$  cents per bushel. Now, if on Tuesday, the price of August wheat in the regular market should fall to 79 cents per bushel Mr. Ream will "put" the 5,000 bushels of August wheat to Mr. Cudahy at  $79\frac{1}{2}$  cents, and will buy the same amount in the regular market at 79 cents, thereby making a  $\frac{1}{2}$  cent per bushel, or \$25, less the money paid Mr. Cudahy for the put the day before. This price is uniform at \$1 per 1,000 bushels for puts and calls good for one day. The buyer of the privilege has therefore made \$20 and the seller has lost the same amount by the transaction. If the regular market price of August wheat had kept above  $79\frac{1}{2}$  cents all day Mr. Ream would not, of course, have cared to sell the wheat to Mr. Cudahy at less than the market price, and would have lost his \$5 paid for the privilege, and Mr. Cudahy would have been



that is not always safe. He might sell at the full price to protect himself and in an instant the market go up so that he could not buy back without considerable loss.

However, taking one month with another, the selling of privileges is a lucrative business. It is no uncommon thing for a man to take in from \$10 to \$50 a day regularly for privileges and, protecting himself by purchases or sales in the market, not lose a single dollar for months by having the grain put or called.

But who are the buyers? With puts and calls "not good" nine days out of ten, it would seem that the men who paid for them must be the most innocent lambs that ever came to the shearer. Not so. They are among the sharpest and keenest of the young Board of Trade speculators. But they have not money enough to stand big losses, although they are anxious to make big winnings. They do not want nor expect privileges to be "good" at the close of the session. They simply buy them as an insurance against loss. For instance, a trader buys puts on 50,000 bushels August wheat at 79½ cents and calls on 50,000 bushels at 80½ cents. That cost him \$100. When the price touches 79½ cents the next day he buys 50,000 bushels of wheat in the market. If the price goes still lower he can lose nothing by it, as he can sell 50,000 bushels that day at that price on his put. If the price goes up to 80½ cents he sells the 50,000 that he bought at 79½ cents with a profit of \$500, and he sells short 50,000 bushels at 80½, in which he is protected from loss by his calls. Then if the market goes down again 1 cent he can buy in that 50,000 bushels with another \$500 profit, and he can repeat that operation as many times as the market fluctuates between those points that day. Of course the market may be stagnant and not touch either extreme, and then he has lost his \$100 paid for privileges.

It is this trading which the Board of Trade directors are trying to stop among the members. It is clearly in violation of state law and it is claimed to be immoral and nothing more than gambling. The discussion of its morality may be left to the good men of the Board, and its unlawful character will receive the attention of the directors, but there is something to be said about its effect upon speculation. It certainly tends to make the market narrow, to keep it within privilege price limits. That is not a bad thing for the Board of Trade scalper and may be of great advantage to him, but the country speculator suffers. He knows nothing and cares nothing about puts and calls. He speculates "on his judgment." This morning there is bad harvest weather in Europe, the spring wheat in the Northwest is rusting, foreign markets are firm, a report comes that the crop in India is 20,000,000 bushels less than was expected, and the country speculator thinks it is time to buy wheat. He buys 10,000 bushels at 80 cents. With all that bull news he thinks it should go to 82 cents, and it would but for the fact that at 80½ cents the buyers of calls have 2,000,000 bushels to sell against their privileges. That stops the advance for that day, and by the next day the weather is a little better, some of the bullish news is contradicted, and the country speculator says to himself, "If we can't buy wheat more than half a cent on all that bull news, it's no use buying wheat," and he sells his out and helps to check any further advance. The man who speculates on the "legitimate situation" gets the worst of it when there is heavy trading in puts and calls. —Chicago Inter Ocean.

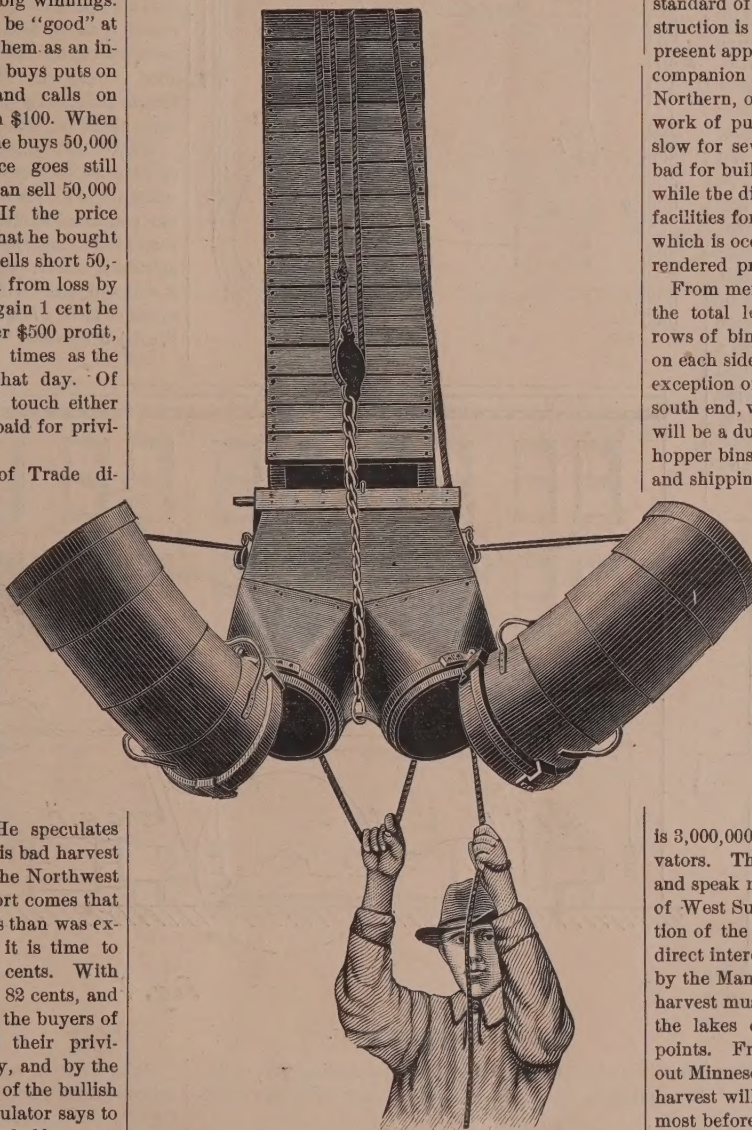
A brief description of a Kansas man's chinch-bug fence may prove of interest to farmers who fear damage by the pest. He takes a strip of flooring and sets it in the ground with the groove up. In the groove he puts candle wicking and saturates it with coal oil. The chinch bug crawls off in disgust when he climbs on this side and gets a sniff at it.

The mouse pest in Australia is much worse than the rabbit pest. The climate is so soft that they have thrived enormously, and there is said to be hardly a residence or store that is not pestered by the plague. In some places they are so thick that, in order to get the stock properly fed, men have to watch while they are eating their provender. The week before the Coolah races the vermin got into the boxes at the station and actually ate the bandages off the horses' legs, while from every side come the tales of crops devoured so rapidly that many fields have had to be abandoned, what was left not being worth reaping.

### THE METCALF PATENT CAR LOADER.

The device illustrated on this page shows the Metcalf Patent Car Loader, which loads and trims cars at the same time. It is made of heavy iron, the wearing parts being lined with steel. One man can easily handle it, and with it a car can be loaded with grain in two or three minutes. In order to get the best results the grain should be given a perpendicular fall of from 35 to 40 feet.

It can be easily changed from one spout to another, and by means of the rope and pulleys which are sent with each machine, it can be handled, when loading cars, by one man. The ingenious manner of hanging the loader makes it especially desirable for oats or light grain, as



THE METCALF PATENT CAR LOADER.

the nozzles will go into proper position, with door of car built up to height required for these grains. The nozzles having a rotating motion, can be raised or lowered to suit the drop or the kind of grain to be loaded. The nozzle is then secured by means of thumb-screws.

Although this device has been patented only about eighteen months, a large number are already in use in Duluth, West Superior, Chicago, and other grain-handling points. Armour & Co. have twelve of them in use, and the transfer houses of the Michigan Central and Chicago & Grand Trunk Railways, which were designed for the rapid and economical handling of grain, both employ the Metcalf Car Loader. The sole manufacturers for the United States are WEBSTER & COMSTOCK MFG. CO., 125 and 127 Ontario street, Chicago, Ill., who will answer all inquiries respecting this valuable appliance.

John Godfrey, a farmer in the vicinity of Flanagan, Ill., has a new kind of oats called the Mexican oats. The grain is much heavier than that of other varieties, and is not so long but larger round. The stalk is very strong and can withstand wind storms better than that of other kinds.

### THE NEW ELEVATOR AT WEST SUPERIOR.

In our last issue we stated that as yet practically nothing had been done at any of the Lake Superior ports toward increasing their elevator and dock facilities over last season. Judging from an article in the West Superior *Inter Ocean* of July 25, we shall have to supplement that statement.

The *Inter Ocean* of that date says: "The foundation to the new Northern Elevator which is being built in West Superior by John McLennan of Chicago for the Manitoba Railway Company is fast assuming substantial shape and proportion under the critical and experienced eye of Eugene Pratt, superintendent of construction. The high standard of work done by Mr. McLennan in elevator construction is well known throughout the country, and from present appearances the new elevator will be a worthy companion to that matchless single elevator, the Great Northern, of which Mr. McLennan was the builder. The work of putting in the foundation has been necessarily slow for several reasons. The weather, which has been bad for building enterprises, has played a prominent part, while the difficulty of procuring stone and the cramped facilities for handling material and the working of men which is occasioned by the numerous railroad tracks, has rendered progress difficult.

From men who are in a position to know, we learn that the total length of the elevator will be 514 feet. Two rows of bins through the center of the annex, and one on each side, will comprise the storage facilities, with the exception of cleaner and shipper bins in the tower at the south end, where all the machinery will be located. This will be a duplicate of the Great Northern, supplied with hopper bins, and fully equipped for receiving, cleaning and shipping. There will be two galleries through the building, between each outside row of bins, and the adjoining one of the two rows in the center. Through the galleries will run the belts for the conveying of wheat when engaged in shipping or cleaning, and the wheat from the bins on either side of each gallery is conveyed by its belt. There will also be two conveyors up above the bins, by which means they are filled with wheat when receiving.

The capacity of this elevator will be 1,500,000 bushels, and when completed will swell the joint wheat capacity of West Superior's elevators to 8,500,000 bushels, which is 3,000,000 bushels short of the capacity of Duluth elevators. These elevators are one of the signs of the times, and speak more eloquently than words of the importance of West Superior as a distributing point. The completion of the Eastern railway of Minnesota now puts us in direct intercourse with all of that great territory traversed by the Manitoba Railway, and the rich products of its harvest must pass through the elevators at the head of the lakes on their journey to Eastern and European points. From present indications the wheat crop throughout Minnesota and Dakota which is now almost ready to harvest will be one of the heaviest yields for years. Almost before the elevators have discharged their present store the new crop will have begun its journey to the head of the lakes."

The bushel measures used in England 200 years ago weighed eighteen pounds of themselves, and any one who walked across the floor while wheat was being measured was liable to imprisonment.

The Indiana state report says that the area of corn is 10 per cent. above that of any previous year. Many fields of winter wheat were plowed up and put into corn. The condition of the grain is estimated at 115 per cent., against a usual condition of 85.

The crops in the Province of Ontario, with the exception of spring and fall wheat and hay, will be above the average in yield and quality. Previous reports stated the outlook was bad, owing to general drought. Since then rain has fallen everywhere, and instead of scarcity there is likely to be an abundance of everything.

The crops in Texas this year are the heaviest in years, and the railroad companies, knowing that after Sept. 1 they will be taxed for cars to move the cotton, lumber, grain, etc., are taking advantage of the present lull in business to lay in a supply of coal, so that when the rush comes they can have the use of all their rolling stock with which to move the crops.

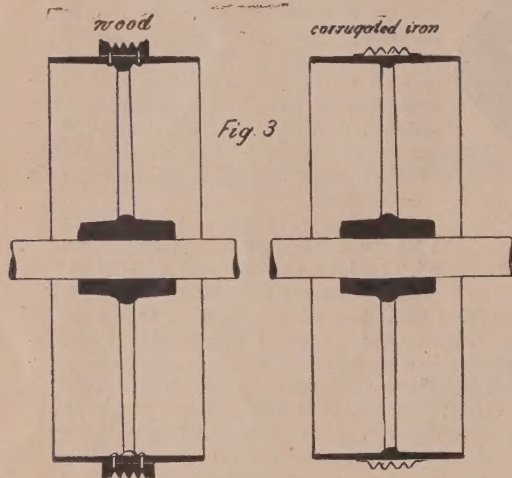


## HEMP ROPE TRANSMISSIONS.

BY E. LEE HEIDENREICH, M. E.

The transmission of power by endless hemp ropes is fast becoming of the greatest importance to the industrial and manufacturing establishments of the United States of America, both owing to the small outlay at the erection, their cheap maintenance, and the fact that they seem in some respects to be the fashion, mechanically speaking.

Hemp ropes may be used as transmission for distances between fifteen feet and a mile or more, and their adaptability may be said to commence where that of belts and shaftings ceases, owing to long distances, although rope transmissions could be applied with advantage in most cases where belting now is used, considering that the cost of rope is about one-twentieth of that of belts. Wire ropes have been used in transmitting power for nearly forty years, being first introduced by a German firm, Hirn Bros., in the year 1850, and for more than twenty years 600 horse power have been carried across the river Rhine at Schaffhausen, Switzerland, on single wire ropes. Even hemp has been used in English mills since 1874, but not in their present development, where one endless rope is wound or wrapped about the sheaves until a sufficient friction by means of a single-strand tightener is obtained, a method hardly four years old, but yet giving evidence to every mechanical engineer and manufacturer of their superiority to the old-fashioned belting. The purpose of this article, being a popular description of modern rope transmissions in general, would not be attained through a detailed specification and calculation of a complicated power transmission, which should be done by specialists in this branch for each individual transmission. However, the advantages of hemp ropes, illustrated by several examples, will serve the purpose of bringing this new transmission before the public in its proper light.



The endless rope of hemp, cotton or iron or steel wires runs in grooves over the sheaves, and the diameter of the rope (from one-fourth to one and one-half inches), as well as the number of grooves, is determined by the power transmitted and the speed. The sheaves are two kinds, drivers and idlers, differing mainly in the form of the grooves, which on the drivers is pointed, designed to grip and wedge the rope, and on the idlers open, giving as little friction to the rope as possible.

If the rope is wrapped or wound more than once around the sheaves it will have a screw-like motion, and therefore, when one point of the rope has traversed the grooved sheave, it becomes necessary that the same point be returned to the first groove. For instance, by nine "wraps" of one and one-half inches the rope would have traversed  $8 \times 1\frac{1}{2} = 12$  inches, and must be brought back this distance across the sheave.

This is accomplished by the tightener, a single grooved sheave, the diameter of which is pitched or declined sufficiently to bring the rope back to the first groove. The tightener serves another and more important purpose, that of giving the ropes the proper tension at all times, whether expanded by moisture or use, and is for this purpose placed on a carriage properly counter-balanced.

The accompanying sketch will illustrate the principle of a complete rope transmission.

A, motor.

B, crankshaft.

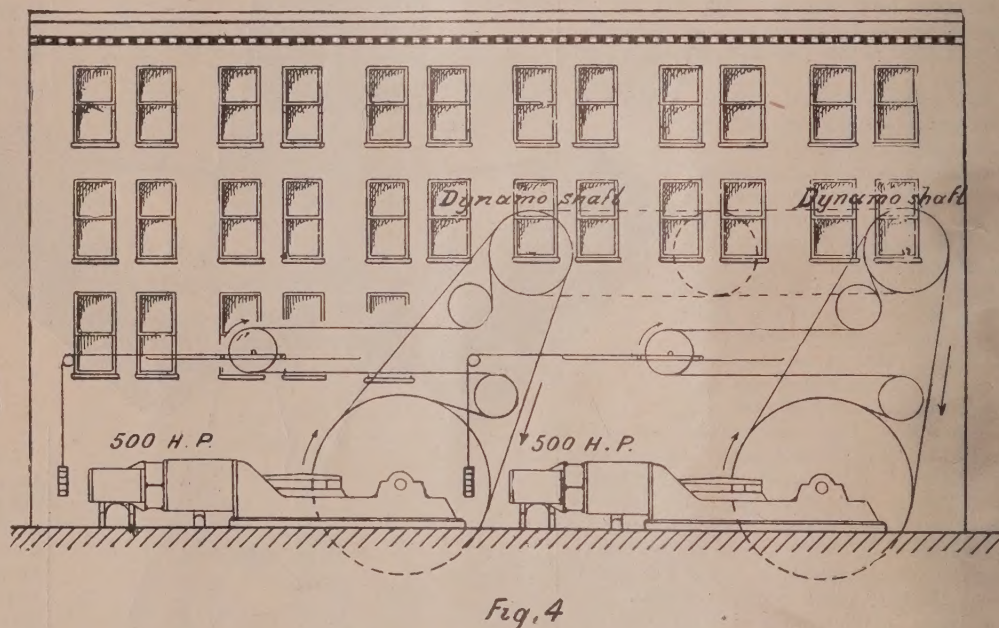
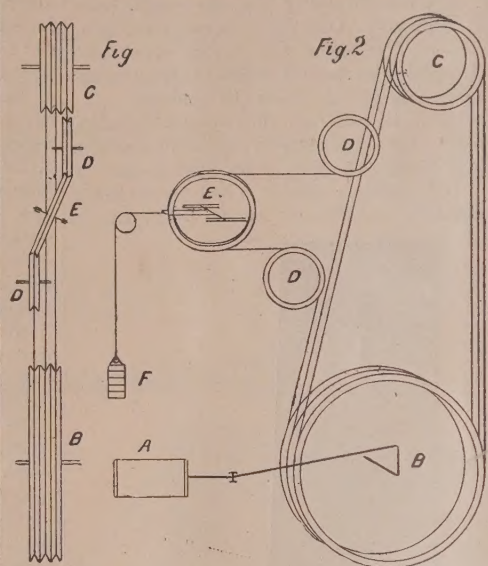
C, driven shaft.

D, idlers.

E, tightener.

F, counter-weight to tightener.

By keeping in mind this general idea, which always will repeat itself, any modern rope transmission will be



HEMP ROPE TRANSMISSION.

readily understood, and the more interesting part of the transmission, its economic features, may next be considered.

In all industrial and manufacturing establishments there is one principal rule, that the raw products always should move in one direction—toward the point where the finished machine is erected and shipped, about as the numerous rivulets join the larger stream before it enters the ocean.

Although this rule sounds very simple indeed, everybody who has had occasion to become acquainted with the general working in such establishments is familiar with the great difficulties in observing it, and has seen how castings are carried back hundreds of feet to have a hole drilled, and loads of wood-working products wheeled to and from to suit the location of the special machines.

To be sure, there may be unavoidable obstructions preventing the proper observation of above elementary rule, such as lack of space, unexpected changes, and extensions of buildings; but the principal hindrance is always that the power could not be had just where wanted, as countershafts and belting could not, with a proper view to economy, bring the power to every nook of the establishment where it would be desirable.

Here the rope transmissions step in. By means of ropes power may be transmitted 400 to 500 feet without difficulty, even much further, and in any desired direction.

The advantages hereby gained are readily understood. The constructing engineer is at liberty to locate his work-

ing machines wherever they are most desirable according to a rational and economical running under due observation of the above principal rules; he can bring his power to the machine instead of misplacing the machine in obedience to the location of the power.

The power may be distributed throughout the establishment from a central station instead of erecting engines at the different departments. A number of countershafts are dispensed with, and considerable space is gained.

While a belt transmitting 400 horse power probably would be about three feet six inches wide, a hemp rope transmission would only occupy a width of about nine inches. This item is of great importance in cities, where each foot of ground costs a small fortune.

The possibility of cheap transmission of power for long distances permits the location of the engine and boiler rooms quite a distance off from the factory, whereby danger from fire, and accordingly the premium of insurance, is reduced. This item alone would recommend the system sufficiently in many instances where other advantages might be less apparent.

Where belt tighteners are not used, belts require a certain tension to prevent slipping, and this tension is considerably in excess when the belt first is laid on, owing to the continual stretching by use. The correct tension, just preventing slipping, therefore, strictly spoken, only exists a moment; when further enlargement takes place, it will slip, and owing to that extra tension all belt transmissions have a large amount of loss by excessive friction in all journals and bearings.

Quite different with rope transmission. The grooved drivers afford a better grip than the smooth pulleys, and for this reason alone the tension is reduced. Besides, the tightener maintains the tension at the minimum point, whereby no unnecessary loss of friction in the journals is incurred. If in addition hereto the fact is kept in mind that less countershafts and less bearings are required, the result will be less friction, and accordingly more economy of fuel.

It has been demonstrated in practice that while the average loss by friction in factories, breweries or other establishments amounts to about 25 per cent. of the power developed, this loss by rope transmissions is reduced to about 13 per cent., giving a clear saving of 12 per cent. of the fuel used under the boiler.

As the amount of oil used is proportional to the amount of power netted, here appears another source of saving by rope transmission.

Every mechanical engineer is aware that a certain amount of slipping takes place even with very tight belts, but while the amount of slipping varies quite considerably with belts, it is nearly constant with ropes, amounting to about  $3\frac{1}{2}$  per cent., which fact insures a steady motion, which for many purposes, such as electric lighting, is of great importance.

The advantages of hemp rope transmission are too numerous to be fully set forth here, but it may be added that while belting often causes the most unbearable noise, the rope transmissions are entirely noiseless.



Fig. 6 gives an idea of this neat and unique transmission,

FIG. 5.

RANDOLPH ST.

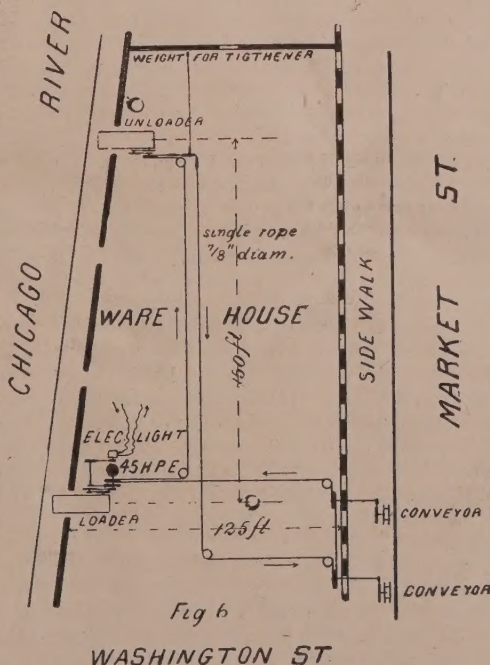


Fig 6

BY R. JAMES ABERNATHEY.

The engine should be very firmly planted on a brick foundation with a rock cap, if available; it is then there to stay. The outer end of the crank shaft should rest on



the piece of timber, which has already been described, built in the wall for that purpose, and projecting into the building far enough to allow a coupling to be placed on it for connecting the main line of shafting running through the basement. The size of that shaft should be  $2\frac{3}{8}$  inches in diameter, and should extend two-thirds the distance through the house. It may go the entire distance through, if desired. If the post foundations are very firm, with no probability of any material yielding or settling, and it can be so arranged, the line shaft can be run in bracket boxes fastened to the main posts supporting the building; otherwise, special posts should be set in, provided with keys at top and bottom for adjustment purposes in lining and leveling the shaft.

For transmitting power to the upper part of the building a pulley 36x9 should be provided. Over that and up through the building between the passage way walls, and close to one side, should run an 8-inch four-ply rubber belt upon a 52x9 pulley on a counter shaft running below the cupola floor. The counter shaft should be the same size as main line below, not that so much torsional strength is required, but to prevent springing by the pull of the upright belt. By no possible means must an upright shaft be used in an elevator. It was formerly the common practice, and the idea is still adhered to by some of the antiquated fogies in the business of elevator furnishing and building, but like their prototypes in flour mill building, they are rapidly dying out, and a few more years will see none of them left. I deem the caution necessary because some grain man desiring to build, and unacquainted with the requirements, might be struck with one of those ancient fellows and done for.

The 52 inch pulley on the counter shaft gives it a speed of 125 revolutions per minute, which is about right. The counter shaft should be supported by adjustable posts running from square of main building to cupola floor. The upper part of building is sure to settle, and of course settle irregularly, making adjustable posts a necessity in order to keep the shaft in line and level. At the very highest point in the roof of the cupola the last and what is known as the elevator shaft must be suspended also on posts running from floor to roof, and like the others must be provided with keys at top and bottom so as to keep the shaft leveled up.

Right here, it might be said, there seems to be a confusion of terms, as the word elevator is used to represent the house proper and the apparatus for hoisting the grain. The former is merely a building for handling and storing the grain and takes the name of elevator from the latter. It has become a common name for all such buildings, and the use of it cannot be well avoided, but I think the reader will have no difficulty in understanding what is meant by noting its application. The elevator shaft need not be more than 10 feet in length, and so far as the torsional strain is concerned, need not be more than  $1\frac{1}{8}$  inches in diameter; but to resist transverse strain and tendency to spring, due to weight of elevator belts and loaded brackets, it should be  $2\frac{3}{8}$  inches, the same as the others. There is but little difference in the cost.

The elevator pulleys should be 36 inches in diameter, and the speed of the shaft 38 revolutions. It must be driven with link belting from the counter shaft below the floor. It will be observed that only three lines or pieces of shafting are used in the entire building, and that is all that will ever be required for small houses, unless drag belts are used for delivering grain from cribs or outside houses of any description. In that respect the house is very plain and simple, and as cheaply provided as can be. In fitting up for handling both ear corn and loose grain, two stands of elevators must be provided. The corn stand should run up close to the passage way wall next to the engine end of the house. The boot should be of iron and adjustable, and containing a pulley 16x14 or 18x14, as may be convenient. The belt should be 13 inches wide and either three or four-ply rubber of good quality. The better the quality the longer it will last, and the cheaper it will be in the end. Nothing about an elevator is so dear as a cheap and worthless rubber belt, unless it be a cheap and ignorant engineer. The cups should be 7x12 in size, and made of heavy iron or steel, as corn is very severe on the cups and wears them out very rapidly, unless very heavy. There should be one cup for every 16 inches of belt.

For the small grain stand of elevators an adjustable boot 10 inches wide and the same diameters as the others should be procured. The belt three-ply and 9 inches wide, and the cups 6x8, with one cup on every 16 inches of belt. The reader will now, of course, understand that the head pulleys of the elevators will be 36x14 and 36x10

respectively. It does not seem necessary to detail the method of running up a stand of elevators, as every millwright understands how to do that, and if he does not he is scarcely fit to be employed on a job of any kind. It is true that it is sometimes difficult to procure a good millwright on country jobs, especially in the West, but it is better to go to some extra trouble, and expense, too, to secure a good man.

Considerable care should be exercised in setting the sheller, as it is the most liable to require extra attention on account of the variability of the feed and strains on it. And, too, it should be set with a view of convenience in getting at it to oil and adjust, or otherwise taking care of it. It was for that reason, mainly, that we provided a large pit. The sheller should have a capacity of about 400 bushels per hour, and of the conical or "Western" type, which sets low and does not take up so much of the height. It ought also to be strong and durable; and while perhaps it would be impossible to procure a sheller that would successfully shell horse shoes, hatchets, coupling pins, rocks, etc., without breaking, still it is important to have one that will come as near as possible to doing so, as all shellers fed from dump hoppers will have more or less of that kind of work to do.

The sheller must be set on the lifting side of the elevator and between it and the dump. The bottom of the machine should be about three feet above the bottom of pit or elevator boot; or it must be high enough to fully run the corn and cobs into the boot above the center of the boot pulley. It must be delivered in that way so that the cups can catch it before it reaches the bottom; otherwise the cobs would lodge in the bottom, the cups being unable to pick them up like loose grain, and the consequence would soon be a choke. The dump hopping around the mouth of the sheller must fit close to prevent the corn from being wasted, and on that account the frame work that it rests upon should be so constructed that it can be dropped down and away from the hopping when it becomes necessary to do so, as is always the case when something about the machine gets broken and has to be repaired or replaced. That feature is of more importance than those not familiar with the requirements of the case attach to it. Ordinarily, the two are so connected that the sheller cannot be got out for repairs without tearing the hopping all to pieces. It can be easily done in the manner here proposed, and quickly, to, without injury to any part of the work.

The sheller should set crossways the elevator leg with its shaft parallel to the main line, so that it can be driven direct from it. The size of pulley on the line shaft, for driving the machine, will depend on its rated speed and size of pulley on it. Rather than make the driving pulley too large in diameter, the writer has frequently changed the standard size of the pulley on the sheller by making it smaller. With small machines it is frequently advisable to do that, unless the standard size is very small, which is not the case with the sheller referred to.

The corn cleaner must be set in the cupola with the tail end of it toward the engine end of the house so that the cobs can be spouted directly to the boiler room or beyond it, when necessary, which is always the case when shelling steadily, as there are many more cobs than can be burned in making steam.

The cleaner can be set on the floor above it, as occasion may require. The higher it is the better for all purposes. It must be set parallel with and driven from the counter line below the floor by belt, the size of pulley depending upon the speed of the machine and the size of the pulley on it. Especial care must always be taken in the construction of the dust spout. It must be fully as large from end to end in the clear as the fan mouth is, and if there are any turns in it they must be carefully made in a circular form, the circle being no less in diameter than the drum of the fan. If that part is not carefully attended to, the machine, no matter whose or what make, cannot be expected to do good cleaning. In that respect the writer has had more trouble than in all cleaning machines of all kinds, because in that respect more ignorance seems to have been displayed by the country millwright than in any other.

The small grain separator is placed in the passage way immediately under the dirty bin, before described, and is driven from the main line in basement. It should be a shaker machine with adjustable sieves, so that any kind of grain can be cleaned by simply changing the sieves. Through that machine all the corn can be recleaned, provided, for any reason the corn cleaner does not clean it well enough to make it grade. That is very liable to occur if corn be wet and difficult to clean. A sieve machine,

if good for anything, can be made to do better cleaning on any kind of grain than it is possible for a rolling screen or cylinder machine to do. The small grain separator should be well braced and made to run very steadily. The smaller sizes are very high in proportion to the floor space occupied, and consequently, as a rule, cannot be held firmly and steadily in position without being well braced. The same care must be exercised in running the dust spout from the separator as from the corn cleaner, because a defect in that will spoil the operations of the best machines ever made.

The separator discharges its grain into the loose grain elevator, which re-elevates it and places it in whatever part of the house required. It will thus be seen that the separator can only run out the grain in the dirty bin and then be stopped until it is refilled from some other part of the house. In order to keep the separator running continually, a third stand of elevators would have to be put in, which can be done at any time at the will of the parties interested, but, as a rule, it can be got along without in most small houses.

The small grain elevator should be provided with a turn head at its discharge mouth and be used as a distributor to put grain into any part of the house and into the hopper scale when weighing out. The corn cleaner should be made to discharge into at least two bins, or more if there is height enough, so as to save re-elevating as much as possible. With a small elevator so built and arranged, all kinds of grain can be quickly and conveniently handled at a comparatively light cost.

### AUGUST REPORT OF CROPS.

The Department of Agriculture reports a small advance in condition of corn from 93 last month to 95.5. Rains have been generally seasonable, though in excess in some districts and deficient in some others. In Kansas, the Carolinas, Delaware and New York the condition is reduced by local drouths. In the Southwest, where drouths sometimes occur at this season, there has been an improvement, and a large crop is already assured. In the corn surplus states high condition prevails, with some advance over the figures of last month. The percentage of the state of the central valleys are:

Kentucky.....	98	Iowa.....	98
Ohio.....	98	Missouri.....	94
Indiana.....	99	Kansas.....	91
Illinois.....	98	Nebraska.....	96

There will be a heavy crop in this region, as it is usually and naturally expected in a seasonable year following one of extreme drouth. High condition of maize also prevails in the Northern border states and territories, Dakota standing lowest at 84.

Spring wheat has fallen from its high position of a month ago. The chinch bug stands at the head of the disasters reported, involving more or less Wisconsin, Minnesota, Iowa and Nebraska, and in places doing serious damage. High temperature, excessive rains, blights, rusts, and the army worm are locally reported, evidently without seriously reducing the general condition. Dakota stands highest with an average of 91, a loss of seven points. Reported yields run an extreme range from a few bushels to 40 per cent. The reduction of the percentage in Minnesota is from 94 to 85; in Wisconsin from 91 to 83; in Iowa from 97 to 84; in Nebraska from 95 to 84. The crop at Washington, Colorado, and other territories and of New England is good, and fair in Northern Illinois, Northern New York, and in the higher latitudes and altitudes of winter wheat states. The general condition has been reduced from 95.9 to 87.3 during July. This exhibit does not include modifying changes in the first part of August. Harvest was about to commence in some districts, and in others the grain would not be ready till the 20th or 25th inst.

There are no estimates of winter wheat after thrashing, as yet, but voluntary remarks of reporters make the yield better than the early promise in all the states that produce much of a crop. Cases of heavy yields are reported. The changes that have occurred in the general averages of other crops during the month are: Oats from 95.2 to 91.7; barley from 91 to 89; spring rye from 96.8 to 91.4. The buckwheat crop first reported in August averages in condition 92.5.

The receipts of wheat for the year to Aug. 1 at Minneapolis and Duluth were 65,000,000 bushels, being 42,500,000 bushels more than was received at Chicago and Milwaukee for the same period.





Mr. A. H. Shipman, inventor of the Shipman Oil Engine, died July 30 in Geneva, N. Y.

The Richmond City Mill Works of Richmond, Ind., have a very excellent and satisfactory trade.

The York Foundry and Machine Shops at York, Nebr., have been granted a charter. The capital stock is \$50,000.

The Jeffrey Mfg. Co. of Columbus, Ohio, report as having plenty of orders for their elevating machinery and drive chains.

The Case Manufacturing Company of Columbus, Ohio, have issued two catalogues, one devoted to their flour and cornmeal machinery, the other being a catalogue of shafting, pulleys, gearing, belting, bolting cloth and general mill furnishings. Both these catalogues will be sent free to those who request them.

Barnard & Leas Manufacturing Company, Moline, Ill., write us that they are crowded with orders, and their capacity is too limited to supply the demand. They have added an addition to their foundry 20x80 feet, and have also inclosed a court in the front of their building, forty-eight feet front by thirty-seven feet deep, this being an addition to their machine shop. This greatly improves the appearance of the building.

S. Howes, proprietor of the Eureka Works, Silver Creek, N. Y., in a recent letter, writes us that in the last ten years the works have not been so badly crowded to fill orders as at the present time, and orders are coming in upon them faster than they are able to build machines. Among the orders lately received have been a number for their largest Warehouse and Elevator Separators for Duluth, Minneapolis and other points. No firm or individual has earned success more than the Eureka Works and Mr. Simeon Howes.

## TRADE IN THE SOUTHWEST.

KANSAS CITY, Aug. 10, 1888.

The past month has been rife with rumors with reference to the probable yield of corn in the states of Kansas and Missouri. About a week ago there was general credence given to the information that the corn crop in Kansas would be a failure and in some sections would hardly pay for the labor of harvesting. In Missouri it was said that while the outlook was not so bad, yet there was plenty of evidence that the per cent. of yield as compared to a full crop had been very much lessened. The bulls at the leading marts of trade were not slow in catching hold of this information and giving it wide-spread notoriety. The result was not evident to any great extent. It was held that while the crops of these two states might be much less than was thought probable early in the year, the loss would be more than balanced by liberal yields from other states. However, the past week has put the corn crop of Kansas upon a substantial basis. The same is true of Missouri. There is no doubt but that ten days ago rain was very much needed in the leading corn sections of the two states, but in the meantime we have had as liberal and well-regulated rains as anybody could well desire. At present all sorts of favorable predictions are brought to hand with reference to the corn yield. The bears think they have a good thing of it, and are using the handle the elements have presented them with to their own advantage. There can no longer be any doubt as to the ultimate outcome of the corn crop of Kansas. While in the northern sections one or two more timely showers would do a world of good, in the more southern sections, even if another rain does not occur until harvest, the ears will fill out well, and the acreage and yield will be large. I have recently received advices from the more southwestern sections of the state, where it was said the danger of loss was the greatest, and all these reports concur in the fact that the outlook is of the best. Some of the farmers down there are already preparing to take hold of their corn, and before another letter shall have been written the corn harvest will be well under way. In Missouri the reports are even more favorable, and it is with pleasure it is recorded that the hopes of the most substantial crop raised in that state for years are based on a firm foundation.

It is curious, however, to note the acts of the bull ele-

ment of these states. No sooner do we have copious showers, insuring a good yield of corn, than all at once the report is sent out that the wheat in shock has suffered and is sprouting in many cases. There are plenty of parties in the land who belong to speculative class who are glad to embrace the opportunity to invest and go over to the bulls on the strength of these foundationless reports. They have done this time and again, and as often have found they have been led astray, but they are willing to keep on in the old route and try their hands at it again. They will be left, however. The wheat crop has not in the least suffered. The great bulk of the wheat all over the sister states has already not only been harvested, but has been put in the thresher, and some of it is on the way to the market. It is believed if 20 per cent. of all that in these two states which is exposed were to suffer by the late rains, there would not be an appreciable difference in the output. It is well to remember that farmers at the present day do not allow their wheat to stay in the shock for weeks and months. The first thing that is done is to thresh it out and house it securely. No farmer will accept the uncertainty of the elements after he has been to all the trouble of raising a good wheat crop. They are not willing that just as they are brought into view of the promised land all their hopes should be blasted. This is the reason that all the threshers throughout these states have been going day and night in order to supply the demand upon them. There are plenty, too, of the best class of threshers in the state to supply any call that may be made upon them. To the readers of this journal who are informed that there is great uncertainty as to the wheat and corn crops of Kansas and Missouri, the advice is tendered not to believe the same, as they are at present without foundation.

Of course, this state of affairs has produced a good deal of a demand for all classes of elevators. There are plenty of parties who have been hanging off from attempting the construction of elevators who are now rushing to the builders and demanding their services at once. Many of these men have waited too long. There is a limit to the ability of the elevator builders to meet the demand, and there is no doubt but that there will be plenty of cases where elevators will not be finished until after this year's demand for the same is of the past. It ought to prove a lesson to the delinquents not to put off their negotiations until the last moment. I am told at present there are more elevators in process of construction throughout Kansas than has ever been the case in the history of the state before. Any of these elevators are now partially completed, and are receiving wheat as fast as it is brought to them. The bulk of them will be in a condition to handle any amount of oats and wheat as soon as the present month shall have come to an end. This will in most of cases be ample time to get the cream of the trade. The farmers of the state are not hurrying their offerings to the market any faster than they can possibly help. They feel that now is not the time to put oats, above everything else, upon the market. The call for this class of cereals comes chiefly from the far West, very little of the same going to the East. There the highest prices are obtained, and as it is thought that very little of the corn will be forced upon the market early in the harvest, it is believed that prices of oats will be much more to the advantage of the holders later on. It seems to be the general impression that elevators throughout Kansas and Missouri do not compare in the aggregate with those in other states. One of the leading elevator men was in the city the other day, and said this was not so. He had built elevators all over the country, and of late years the class of these buildings going up in these two states had greatly improved. Where formerly it had been the rule to put up a little shed of the cheapest description, it was now held that this was the dearest class of edifices to have about. It is the aim of the holder now to put up tasty and lasting structures such as will run a long time without getting out of fix. A half-built elevator is always a source of trouble to the owner, and usually mostly when he is pressed with business.

The local elevators are carrying at present 188,869 bushels of cereals, divided as follows: 105,735 of wheat, 80,930 of corn, 1,158 of oats, and 1,046 of rye. It was thought a month ago that the present supply of wheat would be larger than is the case, but elevator men speak hopefully of the near future so far as this is concerned. The fact is, a good deal of this wheat which should have remained right here has been sent on to the Eastern markets, and the local elevators have not had the opportunity to handle the same. It is said that this is usually the case with the first offerings of a new crop. Corn shows little

change from a month ago, and yet all the elevators have perfected their arrangements so far as possible to be equal to any call upon them. There is a capacity in excess of that last year for the storage of 300,000 bushels of corn without straining any of the elevators. Oats are in very light supply now. This is owing to the fact that most of the city consumers buy direct from the country, and do not pay elevator charges. As noted above, this is not an oats market, and will not be for years, or until the far West can look to some other state than Kansas for its oats supplies.

There has at no time been any very active trading on the Board of Trade. Since the Board moved into its new building everything goes along in a much smoother condition than formerly. The directors have been busy weeding out many of the old and objectionable features, and supplanting the same with the latest and most acceptable schemes. There is no doubt but that it will require a good business set of men to carry out the various details of the running machinery of the Exchange for several years to come. During the past few years it has fallen from grace more or less, and lacks the confidence of the surrounding sections. To regain this confidence is the endeavor of the present Board. While as to its membership it differs but little from the old one, yet there is a much more charitable spirit shown by all parties, and personal feeling is not allowed the play it once had, the policy being the general upbuilding of the market in all channels. The bulk of all the offices in the new building have been rented, and at figures which allow a good sinking fund to lower the indebtedness from year to year. Since the new edifice has been occupied, it is much better liked than many had dared hope at first, and the element who at first objected to the style of architecture are now in many cases its most ardent admirers.

## THE KEEPING OF GRAIN.

As soon as the grain is brought into the warehouse it begins to sweat, which process is accompanied by the same symptoms characteristic to the grain placed in bundles for drying upon the fields. One notices heat, dampness and a peculiar smell. This odor tells us that not only water escapes, but also volatile oils, which, by slow combustion, assume in the air the smell of slightly roasted substances. Beside these matters, carbonic acid must escape, for the heating can only be produced and maintained by the burning of some of the solid substance. The starch is likely to be mostly consumed, the small quantity of fat and proteine seem to burn much less. In order to keep the grain as heavy and in as good a condition as possible, it is therefore necessary to prevent the heating and to promote the evaporation of the moisture as much as possible artificially. This can best be done by storage in shallow layers, and by diligent turning over. When grain is thus stored, the kernels constantly absorb oxygen, even after their first sweating; they issue carbonic acid for the oxygen taken up; they are in the state of slow combustion. This burning is kept up by the hygroscopicity of grain, its desire to absorb moisture. In damp atmosphere they "drink," if this expression be allowed, much water; in dry atmosphere they let go some of the moisture they freely imbibed while in good company with water. According to the experiments of Mr. A. Muntz, the issue of carbonic acid is greater the more the air is renewed, the moister the kernels and the higher the temperature. Oats which laid thirty-six months upon well-aired floors lost 72 per cent. more dry substance than oats which were stored for the same time in a closed vessel. The starch was lessened by 6 per cent., and the proteine was diminished. Corn lost in the air 10 per cent. more of dry substance in sixteen months than other corn did in this time stored in a closed vessel. Out of this it becomes understood that grain ought to be stored as dry and cool and the air excluded as much as possible. A certain Haberland advocates to dry the grain first in a temperature not exceeding 116° Fahr., then place it into silos of masonry, which can be closed air tight. This is rather circumstantial and expensive, and we had better continue storing grain as now practiced.—Translated for the Milling Engineer.

Oats are found to be the best exterminators of rabbits in New Zealand. They do great havoc among the young ones, and in some sections scarcely a rabbit is to be seen.

Barley is the timothy of California. The crop is cut when the grain is in the milk, and when cured either ricked or packed in bales and stored in barns. Horses keep fat upon it.





Issued on July 10, 1888.

**CAR STARTER.**—Rudolf O. Gercke, Augusta, Ga. (No model.) No. 385,800. Serial No. 253,993. Filed Nov. 1, 1887.

**PROCESS OF HULLING, CLEANING AND SEPARATING GRAIN.**—Frederick Melkersman, St. Charles, Mo. (No model.) No. 385,870. Serial No. 244,528. Filed July 16, 1887.

**HORSE POWER.**—Mark B. Patterson, Queen City, Mo. (No model.) No. 386,026. Serial No. 271,023. Filed April 18, 1888.

**BALING PRESS.**—George Ertel, Quincy, Ill. (No model.) No. 386,063. Serial No. 266,408. Filed March 7, 1888.

Issued on July 17, 1888.

**BELT TIGHTENER.**—Seth G. Hunter, Watertown, N. Y. (No model.) No. 386,131. Serial No. 268,128. Filed March 22, 1888.

**FRICTION CLUTCH.**—Henry Barnes, Hyde Park, Mass.; Ann L. Barnes, Orange, Mass., administratrix of said Henry Barnes, deceased. (No model.) No. 386,287. Serial No. 236,811. Filed May 2, 1887.

**BALING PRESS.**—Ephraim C. Sooy, Kansas City, Mo. (No model.) No. 386,360. Serial No. 246,504. Filed Aug. 9, 1887.

**PLANT FOR THE MANUFACTURE OF STARCH FROM GRAIN.**—Sigmund Spitzer, New York, N. Y., assignor to the Vienna Wheat Starch Company of West Virginia. (No model.) No. 386,363. Serial No. 264,671. Filed Feb. 20, 1888.

**CORN SHELLER.**—Henry A. Adams, Sandwich, Ill. (No model.) No. 386,371. Serial No. 259,738. Filed Jan. 2, 1888.

Issued on July 24, 1888.

**WAGON BED ELEVATOR.**—William A. Halliday, Bagwell, Tex. (No model.) No. 386,468. Serial No. 265,531. Filed Feb. 28, 1888.

**PEA SHELLER AND SEPARATOR.**—William A. Slappey, Fort Valley, Ga. (No model.) No. 386,612. Serial No. 234,075. Filed April 7, 1887.

**GRAIN MEASURING AND REGISTERING DEVICE.**—Fredrich H. Ehlers, Montevideo, Minn. (No model.) No. 386,695. Serial No. 269,530. Filed April 4, 1888.

**AUTOMATIC GRAIN METER.**—John Henry, Ardock, Dak. (No model.) No. 386,745. Serial No. 253,413. Filed Oct. 26, 1887.

Issued on July 31, 1888.

**CAR STARTER AND BRAKE.**—Adolf Jeenel, Breslau, Prussia, Germany. (No model.) No. 385,923. Serial No. 268,690. Filed March 27, 1888.

**GRAIN DUMPING DEVICE.**—James P. Sevier and John R. Sevier, Opel, Mo. (No model.) No. 386,934. Serial No. 247,170. Filed Aug. 17, 1887.

**FRICTION CLUTCH.**—Joseph D. Westgate, Worcester, Mass., assignor of two-thirds to Argalis Pease Butler, same place, and Ellsha Young Butler, Boston, Mass. (No model.) No. 386,947. Serial No. 237,932. Filed May 12, 1887.

**GRAIN MEASURING SPOUT.**—John B. McCutcheon, Battle Creek, Mich. (No model.) No. 387,001. Serial No. 269,333. Filed April 2, 1888.

**GRAIN, FLOUR AND FEED SCALE.**—Joseph B. Dutton, Detroit, Mich. (No model.) No. 387,154. Serial No. 253,648. Filed Oct. 28, 1887.

Issued on Aug. 7, 1888.

**GRAIN SEPARATOR.**—George C. Beeman, Minneapolis, Minn. (No model.) No. 387,204. Serial No. 252,187. Filed Oct. 12, 1887.

**CONVEYOR.**—George W. McCaslin, New York, N. Y. (No model.) No. 387,241. Serial No. 221,764. Filed Dec. 16, 1886.

**GRINDING MILL.**—George Raymond and Albert Raymond, Chicago, Ill., assignors to the Appleton Mfg. Co., Appleton, Wis. (No model.) No. 387,257. Serial No. 240,235. Filed June 4, 1887.

**GRAIN MEASURE AND TALLY.**—John N. Holland,

Thorp's Spring, Tex. (No model.) No. 387,302. Serial No. 267,954. Filed March 21, 1888.

**HORSE POWER.**—Henry A. Champman, Strawberry Point, Iowa. (No model.) No. 387,491. Serial No. 255,740. Filed Oct. 29, 1887.

**BALING PRESS.**—Henry F. Blank and Henry W. Schwarzbarg, Quincy, Ill. (No model.) No. 387,496. Serial No. 270,292. Filed April 11, 1888.

**BALING PRESS.**—Franklin Frey, Quincy, Ill., assignor by mesne assignments of two thirds to John O. Hunsacker and Charles M. Swain, both of same place. (No model.) No. 387,508. Serial No. 268,698. Filed March 27, 1888.

**BALING PRESS.**—Friederich W. J. Hoop and Joseph Isaac, Houston, Tex. (No model.) No. 387,516. Serial No. 27,1393. Filed April 21, 1888.

## THE GREAT CANAL PLAN.

BY L. E. COOLEY.

The hope of Chicago in regard to her great sewage problem, and the dream of a waterway connecting the lakes with the gulf, are now in a fair way to be speedily realized.

Three interests are involved—(1) the United States, (2) Illinois, and (3) Chicago. Chicago's interest is the greatest, because of the solution it offers of the sewage problem with which she is confronted. Immense commercial and industrial possibilities likewise hinge upon it. We ask of the Government only that it shall take care of its own interests. Of the state we ask only permission to proceed. Chicago will take care of the enterprise itself at her own expense.

Of the two channels proposed, the one from Lake Michigan by way of the Chicago River, with a branch uniting at the west fork of the south branch, near the limits, thence by an artificial channel to the Desplaines River at Summit, a distance of eight miles, and so through the Desplaines and Illinois rivers to the Mississippi, is the better, as the disposition of sewage can be best effected through it. The other channel is from Calumet River by way of the Calumet feeder to Sag Junction, whence it takes the same route as the other. Eventual sewage considerations will demand the construction of both channels, whichever may be opened first.

From Chicago to Lake Joliet it is proposed that the channel shall be 160 feet wide and 22 feet deep below the lake surface, with a carrying capacity of 600,000 cubic feet of water per minute, and a current of two miles an hour. During a large part of the year the Illinois River is shallow and sluggish, at times stagnant and unhealthy. The pouring of so large a volume of water into it will make it capacious at all times, it will become vigorous and purify itself, and by dilution and otherwise will overcome all bad effects now experienced from the sewage of Chicago and the towns along the Desplaines. Further than this, even the Mississippi will be benefited by the great volume of water sent thither from the Great Lakes. It will raise the low water stage one foot at St. Louis, and six inches at Memphis, besides redeeming it from the fatal sluggishness which falls upon it in times of drought.

The waterway proposed would constitute 113 miles of the Hennepin Canal, and afford a tremendous water power of not less than 100,000-horse between Lockport and La Salle.

In regard to the notion that it might affect the lake by lowering its level to an extent injurious to harbor interests, that is absurd. That point has been fully considered in connection with the results of scientific observation of the fluctuations of the lake levels, and the conclusion reached that nothing in that direction is to be feared.

The paramount question is that of sewage. We are now discharging our sewage into the Chicago River, and pumping the river into the Illinois and Michigan Canal, whence it flows into the Desplaines and Illinois rivers. The capacity of the canal and pumps (60,000 cubic feet per minute) is not sufficient for the dilution of the sewage of the present population, while the capacity of the proposed channel would be 600,000 feet per second, ample for a population of 2,500,000. A channel of this size, if designed for sewage purposes alone, can be constructed at a less cost than if also suited to navigation. Uniting the two purposes in the same channel makes a navigable waterway a certainty in the near future, while a channel for navigation alone, on account of its great expense, would doubtless be delayed for many years. It is proposed that Chicago shall pay the full cost of taking care

of her sewage, leaving the United States only the expense of suiting the channel to the purposes of navigation. The legislature will simply be asked to adopt the necessary acts to enable Chicago to do her part of the work at her own expense.

How long do you imagine that it will take to get the work through?

Well, perhaps in four years from the time we obtain the required legislation. We shall present the matter to the legislature this winter. It will be referred, I suppose, to the people for a vote, after which, if that shall be what we desire and expect, it ought not to take more than five years to cut the channel and provide for all the other contingencies.

The Government surveys under the War Department will begin, I suppose, very shortly, and the city will look after her interests at all stages of the enterprise, the administration as well as the Citizens' Association being anxious to promote its early and complete success.



[We invite correspondence from every one in any way interested in the grain trade, on all topics connected therewith. We wish to see a general exchange of opinion on all subjects which pertain to the interests of the trade at large, or any branch of it.]

## SHORT WEIGHT.

*Editor American Elevator and Grain Trade:*—Your journal is first-class. We wish something could be done in regard to short weight. It is a crying shame the way bulk grain comes to the Eastern market. We had a car of sack grain shipped from the West last week, containing 142 sacks of middlings, purporting to be 190 pounds to the sack. They were sold and paid for and found to contain from 122 to 185 pounds per sack upon arrival. Now some one knows about this shortage, and it should be stopped. As for myself, I will sue any one who fails to deliver what I buy and pay for.

Yours truly,  
Marblehead, Mass. J. B. WOODFIN & Co.

## SOUTHERN INDUSTRY.

*Editor American Elevator and Grain Trade:*—We in close renewal of our subscription to the AMERICAN ELEVATOR AND GRAIN TRADE. We cannot get along without it. The three large cotton factories that are now being built in this city are nearing completion, and will be ready for work when our cotton season opens. The Victor with \$200,000, the Ada with \$175,000 and the Alpha with \$150,000, paid up capital. Two large dummy engines have been ordered to be placed on the extension of our street railway. We have a wideawake city, and a progressive as well as prosperous people.

Yours truly,  
Charlotte, N. C. JNO. W. MILLER & Co.

A pamphlet recently issued, called "The Resources of Dakota," gives the cost of producing an acre of wheat in that territory at \$5.95. The yield, at a low average, is 20 bushels to the acre.

An Idaho farmer says he thrashed out sixty acres of volunteer wheat that averaged 25 bushels per acre, literally a gift of nature, for the ground was neither plowed, harrowed nor sowed.

George Taylor, a prominent manufacturer of St. Louis, Mo., is authority for the statement that the jute bagging manufacturers have formed a pool or trust and advanced the prices of bagging from 7 to 11 cents per yard. Fifty million yards of this bagging are consumed per annum, and the advance means an additional expenditure of \$2,000,000 to consumers. St. Louis mills produce nearly one-half the product of the United States.

The *Journal of Indianapolis*, Ind., says: "The opinion prevails with the grain men and farmers in the territory which ships East via Indianapolis that, owing to the Inter State Law, the grain producers are paying from 3 to 5 cents more to get their grain marketed than they would under the old order of things; consequently, it is stated by one of the leading grain merchants here that a strong opposition to the law is manifesting itself of late."



## INCIDENTALS.

A lover, like corn, turns white when he pops.—*Ex.*

Ohio farmers expect one of the biggest corn crops on record.

If a man is to reap what he has sown he will want to sow more wild oats.

The value of the cereal product of Iowa in 1886 was \$128,115,026, and in 1887 \$107,600,535.

The Iowa State Agricultural Society estimates the corn crop this year for that state at 272,895,000 bushels.

The average yield of wheat per acre in the United States in 1887 was 12 $\frac{1}{10}$  bushels, corn 20 $\frac{1}{10}$  bushels, and oats 25 $\frac{1}{10}$  bushels.

A Mississippi paper says that the corn crop of that state this year will probably exceed that of 1887, which returned Mississippi to her *ante bellum* position of a "corn surplus" state.

In Michigan, oats are estimated to yield 36 bushels per acre in the southern counties, 28 bushels in the central, and 21 bushels in the northern.

Missouri comes to the front with an ear of corn two feet and two inches long, a product of this season's crop. Let Kansas bushwhack this at once.

A farmer near Racine, Wis., recently exhibited a head of oats from which he had taken seventy-eight kernels, and a head of wheat that held ninety eight kernels.

It is not a common thing to see corn in Illinois grow to such an enormous height as it has this year. In many fields innumerable stalks can be found 12 feet high.

One of the Parisian fads is to wear ears of corn on the head. The style elsewhere is to wear the ears on the head and the corns on the feet.—*Philadelphia North American*.

About half the wheat now in the elevators at Duluth is said to be owned in Chicago, and there is considerable anxiety to get it forward. Vesselsmen have been bid 3 $\frac{1}{2}$  cents for loads from Duluth to Buffalo.

A Chicago commission merchant recently received an order to buy 10,000 bushels of wheat at the market price and to sell 10,000 bushels at the same price, also to close each deal whenever it showed a profit of 3 cents a bushel.

A correspondent in Minneapolis writes: "The elevator men here are generally opposed to starting in on a new crop with high prices, and will not give out the actual information they have in regard to damage. It is greater than generally known, and privately they will admit that."

Crop reports received Aug. 7 from all parts of the province of Ontario show that all cereal crops, with the exception of spring and fall wheat, will be above the average in yield and quality. Late rains have redeemed the crops which were a few weeks ago considered failures.

The following would make a good pair to draw to: Step-ladders will be in requisition when it comes to husking Nebraska corn this fall.—*Omaha Republican*. One of Minden's best carpenters has struck quite a snap, making stilts for the farmers to pick corn with.—*Omaha (Neb.) Bee*.

A dispatch from Ottawa, Ont., of the 10th inst says: "Reports of terrible ravages caused by grasshoppers in the surrounding districts are daily reaching Ottawa. A local naturalist who visited the infected district was curious enough to make a calculation and estimate the number of the creatures on each square mile. This calculation showed that there were on each square mile of territory upward of one hundred millions of grasshoppers."

The San Francisco *Bulletin* of Aug. 8 says: One-third of the wheat cargoes cleared from this port in July went to Havre. Five cargoes have been cleared since the 1st of August, and every one of them has gone to Havre. Such activity in shipping wheat to France is without a parallel at this port. It is generally conceded that the wheat crop of France this year will be short. An average crop in that country is about 300,000,000 bushels. Now they are talking of a crop of 256,000,000 bushels for this year, or a deficiency of about 44,000,000 bushels.

California could not fill that gap if it wanted to this year, but it will contribute its quota.

The *Canadian Journal of Commerce* of Montreal, says that a number of people there mourn the loss of about \$10,000 put up as margins with a Montreal broker for alleged deals on the Chicago Board of Trade. The broker never made the deals for his principals, but used the margins for his own private speculations. The Chicago house, which he claimed to represent, repudiated him.

A farmer informs the St. Charles Minn., *Union* that he has learned of a new and successful way to raise winter wheat. It is simply to sow buckwheat with it. The buckwheat stools out well and protects the wheat from winter-killing. The buckwheat itself dies, therefore is not mixed with the wheat when harvested. Sow at the rate of a bushel and a half of wheat to a half bushel of buckwheat per acre. The experiment is certainly worth trying.

The *Observer* of Portland, Mich., says that Mr. B. Probasco of Sebawa, that state, recently brought to their office some heads of Egyptian wheat which are simply immense. The average length of the heads is 6 inches, and on some heads the number of berries runs as high as 102. The berries are plump and solid. Mr. Probasco has a large field of this variety of wheat, and some of his neighbors have put the yield as high as 40 bushels to the acre.

Says *Chicago Daily Business*: "If this were a year of bounteous wheat production, an unusual percentage of wheat of inferior quality, such as is being received at primary markets now, might be expected to drag down prices, but where there is an assurance that this light weight wheat is from a crop below an average such an effect is not seriously feared. Exporters are already estimating that the inferiority in the quality of wheat this year will be equivalent to an additional shrinkage of 25,000,000 bushels in the total production. That will make a big hole in a short crop."

The government crop report gets some severe criticism in the country most affected by it. A dispatch from Minneapolis says: "Dodge's estimates are laughed at by men who have been in the trade here for twenty years and have better facilities for knowing the condition of crops than Dodge can possibly get. This report may have a temporary effect on the market, but it won't raise the wheat. The estimate of 179,000,000 bushels spring wheat is sheer nonsense. The best men in the trade here will bet that Minneapolis and Duluth will not handle as much on this crop by 10,000,000 bushels."

The Kansas wheat crop, as reported by the secretary of the State Board of Agriculture, is 17,500,000 bushels, and the quality fine; the acreage of corn, 7,000,000, which at 40 bushels to the acre, would give a yield of 280,000,000 bushels; the acreage of oats, 1,655,926, which at 40 bushels to the acre, an estimate that is considered low by those who have seen the crop, means 66,237,000 bushels of this grain in the state. The hay crop may be safely put down at 5,000,000 tons of all kinds; the potato crop is thought to be light at 7,500,000 bushels, and it is claimed that there will be 950,000 bushels of flaxseed raised in the state.

The amount of binder twine used in this country last year is estimated at the large figure of 35,000 tons. It is an important item with the large wheat growers, and they are interested in other experiments with cheaper material. Hemp is being used, and it is claimed that it is stronger than the manilla and can be grown so as to materially reduce the cost. The parties who are testing weeds for this purpose believe that they have the best material, and it must certainly be the cheapest. The officials of the Farmers' Alliance are now in correspondence with parties who claim the invention of greatly simplified machinery for the manufacture of twine, which will enable farmers to make during the winter months all they need for binding their crop.—*Northwestern Farmer*.

In a paper read before the late convention of The millers Association, S. T. K. Prime said: "No crop has proved more remunerative with farmer and more certain in yield in bushels for the last four years than the oat crop. The average in oats this season in Illinois is larger than that of corn. One reason of the immense acreage of oats this season is this: The scarcity of money and the need of feed in August in all those districts where the corn crop proved a failure last season. There are no excessive stocks of old oats to-day, either in elevators or in the hands of the farmers. The only trouble to-day with the oat crop (and that is a borrowed trouble) is that they are very likely to lodge at harvest, but if they only lodge

in the half bushel we shall have little to complain of. The grain binder has worked a perfect revolution in the oat crop. Forty acres of oats can be handled now with as much ease, and in fact more so, than ten acres were eight or ten years ago. Both ends of the oat crop now are of value, and the straw is picked up with great avidity by the cardboard mills of the country."

L. A. Hagan, a farmer living near Burlington, Kan., has invented a trap or machine that he claims will catch chinch bugs successfully from growing corn. He had a piece of oats beside his corn field, and when he commenced to harvest the oats the bugs went to the corn. He then went to work and made this machine, and off of four rows of corn, about one-fourth of a mile in length, he gathered in about five bushels of bugs, all there was on the corn, and saved his field. The trap is made in the shape of a large scoop, the lower portion of which fits closely about the bottom of the hill of corn. The stalks are then slightly leaned and gently rapped with the hand, causing the bugs to fall in the trap. He says he can work five acres of corn in a day, and completely exterminate the bugs. He made a rough trap for a neighbor who had a large field of broom corn on which the bugs had commenced to work freely, and he succeeded in cleaning them out thoroughly. When the trap is well filled with bugs he empties them in a sack. Mr. Hagan has applied for a patent.

## BROOKLYN WAREHOUSES COMBINE.

The Brooklyn Grain Warehouse Co. was incorporated June 23, with \$100,000 capital, and has leased and will operate all but two of the grain warehouses of Brooklyn. The officers of the company are Edward Annan, president; J. Brice Martin of Beard's Erie Basin stores, vice-president; R. H. Lambier, treasurer, and Timothy Woodruff, secretary.


The list of warehouses now held by this company, says the *Bulletin*, includes the Dow and Columbia stores, formerly leased by Mr. Annan, with a capacity of 4,000,000 bushels; the Grain Warehouse Co.'s stores, formerly leased by Mr. Lambier, with a capacity of 6,500,000 bushels, and about forty-five in number; Pinto stores, thirty in number, 1,500,000 bushels; Beard's stores, about twenty in number, 2,500,000 to 3,000,000 bushels; Woodruff's five stores, 1,500,000 bushels; Nash & Whiton's stores, twelve in number, 1,750,000 to 2,000,000 bushels; the Kelsey & Central, or Bartlett stores, eight in number, about 1,500,000 bushels, and the United States or Iron elevator, with one store and 500,000 bushels' capacity, making a total of 124 stores with a capacity of 20,000,000 bushels, most of which is used solely for grain storage. Of the above the Empire Storage Co. controls 8,000,000 bushels' capacity, or about 40 per cent., namely, Beard's, Nash & Whiton's, Woodruff's and Bartlett's. By this arrangement the Empire Company surrenders the control of its grain storage capacity to the Brooklyn Grain Warehouse Co., while retaining control of the general storage warehouses along the Brooklyn water front, which they practically monopolize.

The directors are J. S. T. Stranhan and A. E. Orr, beside the officers of the company. Of the houses enumerated, Pinto's stores and the United States Elevator have not come into the combination, but will co-operate with it, thus practically placing the entire grain storage capacity of Brooklyn under the grain warehouse company. In speaking of the causes that led to the formation of this combination, Mr. Lambier, the treasurer of the company, and the largest contributor to its capacity, said: "It was not so much the late demoralization of storage rates and the business as it was the result of the new elevator law, which had compelled the warehousemen to combine for common self-protection and defense."

The Australian colonies have a very considerable quantity of wheat for export to Europe when the price there shall pay them a satisfactory profit.

Later advices from Buenos Ayres state that in spite of the increasing supplies, the exorbitant prices for maize are fully maintained. The deficiency in the crops is turning out greater than expected, and the inland distilleries especially have still to buy largely in order to cover their needs up to next harvest. The city of Buenos Ayres has grown enormously of late years, and numbers to-day close on to 500,000 inhabitants, and the consumption of maize as food for horses has correspondingly increased. La Plata will have to all appearance no more maize to sell Europe this season.





## ELEVATOR AND GRAIN NEWS

W. J. Hawk is building an elevator at Buffalo, Dak.

C. Fitzpatrick will erect a corn mill at Lynnville, Tenn.

Jos. T. Fewkes, Starke, Fla., is erecting a corn mill, etc.

The Farmers' Warehouse at Woonsocket, Dak., will be enlarged.

Clay County, Kan., will have 4,000,000 bushels of corn this year.

New wheat sells in Walla Walla, Wash. Ty., at 50 cents per bushel.

A new 20,000-bushel elevator is to be built at White-water, Man.

An elevator and warehouse will probably be erected at Owensboro, Ky.

Fluke & Son will build an elevator at Horton, Kan., to cost about 5,000.

A 300,000-bushel elevator is in course of erection at Gladstone, Mich.

A large elevator will be built at Horton, Kan., in time for the new crop.

Elevators will be erected at Miller, Ree Heights and St. Lawrence, Dak.

The Hamburg Distillery at Pekin, Ill., will shortly close down for repairs.

Two large elevators will be erected at Grant, Neb., in time for the fall season.

The Rock Island R. R. Company is building an elevator at Wellington, Kan.

The Future City Oil Company will erect a cotton-seed oil mill at Marianna, Ark.

Ole Rosholt, Oconomowoc, Wis., will sell his elevator and machinery at that point.

Kelly, Crosby & Co., Jug Tavern, Ga., contemplate erecting a corn and flour mill.

Iowa agricultural crop reports estimate the corn crop this year at 272,885,000 bushels.

John H. Evill & Co., dealers in grain, etc., St. Louis, Mo., have dissolved partnership.

W. L. Reed is successor to H. T. Reed & Son in the grain business at Monteith, Iowa.

Alston, Maury & Co., grain commission, Memphis, Tenn., have dissolved partnership.

Taylor & Stebbins, grain and flour dealers, Manchester, N. H., have dissolved partnership.

Lowry Bros. are successors to Thomas W. Lowry in the grain business at Lincoln, Neb.

Twenty-five bushels to the acre is reported about the average of Kansas wheat this year.

C. P. Williams, 9 Howard Row, Memphis, Tenn., wants catalogues of corn mill machinery.

Storz & Iler, Omaha, Neb., contemplate the erection of a mammoth new brewery in that city.

The Union Oil Works, New Orleans, La., are being improved at a cost of about \$12,000.

The Whitney Elevator Company, Rochester, N. Y., will put in a Cyclone Dust Collector.

Brown & Skinner have sold their grain elevator at Twin Lakes, Minn., to Johnson & Sorenson.

J. T. Dierson, Louisville, Ky., contemplates the erection of a brewery at that place shortly.

Edward Harris is successor to Jones & Harris in the grain business at New Philadelphia, Ill.

G. S. Barnes, a prominent grain dealer of Fargo, Dak., has recently returned from a European tour.

Jones & Parkhurst are successors to Jones, Parkhurst & Co., in the grain business at Sheldon, Iowa.

C. W. Seefield, St. Charles, Minn., has greatly enlarged and improved his elevator at Utica, that state.

C. D. Martin and others will erect a 200,000-bushel elevator at Minneapolis, Minn., to cost \$46,000.

Keenan & Son, Corsicana, Tex., are building a three-story broom factory, 30x60 feet in dimensions.

J. G. Mattingly & Sons, distillers, Louisville, Ky., have incorporated with a capital stock of \$200,000.

The Yazoo Cotton-Seed Oil Works at Yazoo City, Miss., have been improved at a cost of \$11,000.

The Getty & Larkin Mill and Elevator Company has been incorporated at Ellsworth, Kan., with a capital

stock of \$50,000. The directors are Arthur Larkin, John Getty, C. J. Evans, Robert Martin and others.

Two elevators with a combined capacity of 100,000 bushels are nearing completion at Wayne, Neb.

Three thousand bushels of corn are converted into glucose daily by the big glucose factory in this city.

Mrs. Schunk, wife of John Schunk, grain dealer, Deer Creek, Ill., is lying very ill at Morton, this state.

C. W. Bailey has been buying corn at Tomlinson, Ill., the past few months for Harvey & Co. of Chicago.

The Model Roller Milling Company, Trenton, Ky., will put in wheat elevators and two double sets of rolls.

McBride & Co., Newnan, Ga., are erecting a building to increase the capacity of their oil mill and ginners.

Messrs. Rogers Bros. will erect a grain elevator in connection with their new roller mill at McGregor, Man.

From forty to fifty thousand bushels of corn were shipped from Farmer City, Ill., in one week recently.

K. Dykema & Bro. are successors to P. Dykema & Son in the grain and feed business at Grand Rapids, Mich.

The Scandinavian Elevator Company of Minneapolis, Minn., will shortly begin the erection of its new elevators.

The Fayetteville Oil Company, Fayetteville, N. C., are repairing their oil mill and putting in additional machinery.

W. C. Gwin, formerly at Sidney, Ill., is buying grain at Waverly, Ill., for E. R. Ulrich & Son, Springfield, this state.

The Moss Collar Co. of Fort Worth, Tex., have added to their factory machinery for manufacturing jute bagging.

The Clements Starch Works at Madison, Ind., after being shut down for five weeks for repairs, started up Aug. 1.

The citizens of Gagetown, Mich., contemplate bonding their town in the sum of \$2,000 to build a roller mill and elevator.

The Sarnia Grain Warehouse Company has been incorporated at Sarnia, Ont. Mr. Leys is president of the association.

Rowland F. Hill & Co., grain buyers and shippers, Burlington, Iowa, have incorporated with a capital stock of \$60,000.

A Butte (Cal.) man who began farming on rented land ten years ago, is said to have this year \$61,000 worth of wheat to sell.

Griesser & Maritzen, architects, Chicago, Ill., are preparing plans for a \$150,000 brewery, to be erected in the City of Mexico.

The addition to Gilmore & Frank's elevator at Gridley, Ill., is about completed, and the machinery will shortly be placed in it.

Armstrong & Gilthorpe have placed in their elevator at Beason, Ill., a new corn sheller with a capacity of 3,000 bushels per day.

H. N. Rorison of Moosejaw, Northwest Territory, will erect a 20,000-bushel elevator, if the citizens of that place will give him a bonus of \$1,000.

Allen & Co., New Orleans, La., contemplate enlarging their distilling plant to engage in the manufacture of wood alcohol, etc.

George A. Seaverns will build a one-story addition to his elevator on the C. & A. tracks in the city, 100x100 feet, to cost \$9,000.

The grain warehouses throughout the northern part of Solano county, Cal., are filled to overflowing, and the grain is not yet all in.

James H. Milne, a well-known member of the Chicago Board of Trade, has retired from business and gone to Adrian, Mich., to live.

The Howell & King Company has been incorporated at Pittston, Pa., with a capital stock of \$24,000, to engage in the brewing business.

There were 24,576,000 pounds of wheat and 8,760,000 pounds of barley shipped by rail and river from Red Wing, Minn., last season.

A company with a capital stock of \$30,000 is being formed at Charleston, S. C., to manufacture grain bags, flour sacks and paper bags.

J. L. Hayes & Co., Lewiston, Me., have improved their grain establishment by the addition of a Whitman Single Horse Power and Grain Elevator.

Walter Nixon has bought the corn and cribs of S. A. Brown & Co., at De Witt, Ill. The purchase includes about 25,000 bushels of corn.

Thomas W. Hall, an extensive wheat dealer at Chicago, Ill., made an assignment July 19. His liabilities are estimated at \$150,000; assets \$130,000.

The Northern Pacific Elevator Co. of Minneapolis, Minn., have placed an order for fifty-eight grain testers with J. L. Owens & Co. of that city.

The Duluth & Dakota Elevator Company has been incorporated with headquarters at Minneapolis, Minn. The incorporators are D. Morrison, George H. Christian and

W. C. Stinson of Minneapolis, and George H. Barnes of Fargo, Dak. The company has a capital stock of \$300,000.

G. W. Williams will erect a 10,000-bushel elevator at Chanute, Kan. It will be three stories above the basement, with a one-story engine room.

Herman Krupp, C. A. Schaefer and Adolph Meyer, have purchased a site 168x800 feet at Louisville, Ky., on which they will erect a large brewery.

The new grain elevator to be erected at Glenboro, Man., by the milling firm of Ogelvie & Co. of Winnipeg, will have a capacity of 37,000 bushels of grain.

The grain elevators at Indianapolis, Ind., contained on Aug. 1, 1888, 227,977 bushels of grain, against 248,225 bushels for the corresponding date of 1887.

One of the two elevators which will be built on the Canadian Pacific Road at West Superior, Wis., will consume 5,000,000 feet of lumber in its erection.

William Gebhard, Morris, Ill., will erect a new malt house and kiln to cost about \$20,000. Architects Griesser & Maritzen of Chicago, are preparing the plans.

W. A. Broughton, Madison, Ga., is interested in a \$40,000 stock company which has been formed at that place to build a cotton-seed oil mill and guano factory.

A. B. Taylor & Co., Minneapolis, Minn., have re-embarked in the grain business. About one year ago Mr. Taylor sold out his business to D. C. Moak & Co.

The capacity of Mark Evans' new grain elevator at Fort Worth, Tex., will be 125,000 bushels. The building is to be 46x100 feet in size and over sixty feet high.

W. E. Muessel, South Bend, Ind., and The Frost Mfg. Co., Galesburg, Ill., have placed orders for the Harrison Conveyor with Borden, Selleck & Co., Chicago, Ill.

Timpson, Tex., has subscribed \$12,500 to the stock of a cotton-seed oil mill company, which will erect a mill there. P. H. Murray is interested in the enterprise.

The capacity of the Charlotte (N. C.) Cotton-Seed Oil Mills is to be doubled. Last season the mills crushed thirty-five tons of seed per day from October to April.

The Ogilvie Milling Company, Winnipeg, Man., will erect elevators at Pilot Mound and Plum Coulee, that province. They will have a capacity of 37,000 bushels each.

Edward Dalkin and others of Barrie, Ont., will form a joint stock company to erect a grain elevator. Plans for the structure are being prepared. It will cost about \$5,000.

In the first three weeks of July, 1887, there were loaded at stations on the Indianapolis, Decatur & Western Road 329 cars of wheat, but this year only eleven cars were loaded.

A. J. Sawyer of Minneapolis, Minn., is putting new machinery in his elevator at Duluth, and has given his order to J. L. Owens & Co. of Minneapolis, for a large dustless separator.

The Farmers' Joint Stock Company has been organized at Millbank, Dak., with W. T. Burman president. An elevator of about 20,000 bushels' capacity will be erected in time for the new crop.

Main & Zobelein, Los Angeles, Cal., will erect a malt house, elevator and other brewery buildings to cost \$25,000. The plans are being prepared by Griesser & Maritzen, architects, Chicago, Ill.

The Petersburg Distilling Company has been incorporated at Covington, Ky., with a capital stock of \$100,000. The incorporators are J. W. Freiburg, J. L. Workum and Maurice J. Freiburg.

The old town of Deer Creek, Ill., is being removed bodily to the L. E. & W. Railroad. Bartlett & Co. of Peoria, Ill., have established an elevator there under the management of John Schunk.

\*Frank V. Haven, formerly of the lumber firm of C. D. Haven & Co., Minneapolis, Minn., has associated himself with A. B. Taylor & Co. in the grain business in that city, the partnership to begin Aug. 1.

The Northern Pacific Railroad Company will build a mammoth grain warehouse at Tacoma, Wash. Ty. It will be a two story structure 500x120 feet in size, with a capacity of 15,000 tons of grain.

Complaint is again heard that shippers are overloading cars. Grain cars marked 40,000 pounds' capacity have been received at Indianapolis, Ind., lately, containing from 50,000 to 58,000 pounds of grain.

The Monumental Brewing & Malting Company, Baltimore, Md., will commence work Aug. 1, on a five-story brewery in that city. The annual capacity will be 200,000 barrels, and the plant will cost \$250,000.

George H. Cox of Bloomington, Ill., who has for many years been prominently identified with the milling industry of Central Illinois, will erect a 50,000-bushel elevator adjoining the Hungarian Roller Mill in that city.

The Canadian Pacific R. R. Company is making extensive preparations for the handling of the immense surplus of grain from Manitoba this fall and winter. In addition to the 1,250,000-bushel elevator already in operation at Thunder Bay, Ont., another large elevator is in course of erection alongside of this one, with storage capacity for



1,400,000 bushels. It is said that the latter edifice will be the largest grain warehouse on the continent, having space for 100,000 bushels more grain than the largest one at present in operation at Minneapolis.

The foundation for T. W. McCausland's new elevator at McCausland, Iowa, has been laid. Mr. McCausland will put in a large cleaner to clean grain in transit, and a mammoth corn sheller. The elevator will be run by steam power.

The Minneapolis & Northern Elevator Co., with headquarters at Minneapolis, Minn., have purchased grain separators for their elevators at Glasston and Argusville, Dak., and Moorhead, Minn., of J. L. Owens & Co., Minneapolis, Minn.

The Farmers' Alliance of Miller, Dak., will begin the erection of a grain warehouse at that point, immediately. The Chicago & Northwestern R. R. Company will transport the lumber for the building from Winona, Minn., free of charge.

John A. Campbell, a prominent grain dealer of Lexington, Ill., made a voluntary assignment Aug. 4. His liabilities amount to \$6,200; assets, \$8,030. This is the second time Mr. Campbell has failed, the first time being about ten years ago.

The Evansville (Ind.) Grain Company want the Peoria, Decatur & Evansville R. R. Company to pay them \$4,000 damages on seven carloads of wheat which were not moved promptly after being loaded, and consequently were destroyed by fire.

Messrs. Richard and Scott Cowan of Shannon, Ill., will erect a grain elevator at Kent, this state. The capital invested will amount to \$3,000, one-half of which the citizens of Kent will furnish, the balance to be contributed by the Cowan brothers.

The Alliance Warehouse Company is erecting an elevator at Valley, City, Dak., and the Russell & Miller Milling Company will shortly build an elevator there. These will give Valley City five elevators, with a combined capacity of 500,000 bushels.

W. M. Hall, agent of the Minneapolis Elevator Company at Ogden, Iowa, has absconded with \$1,300 belonging to the company, and left local merchants to whistle for about \$500 more. Efforts to discover his whereabouts have so far proved futile.

R. Hughes, Asheville, Ohio, has placed an order with Barnard & Leas Mfg. Co., Moline, Ill., for one No. 2 Victor Corn Sheller, one No. 2 Vic or Corn Cleaner, one No. 3 Warehouse Separator, all the iron work, belting, etc., for his new grain elevator.

A. & W. Ogilvie & Co. of Montreal, Que., now have four new grain elevators under construction in Southern Manitoba along the line of the Manitoba & Southwestern Railroad. They will each have a capacity of 50,000 bushels, and will cost \$15,000 apiece.

The Canadian Pacific Railway Company proposes to erect another large grain elevator at Owen Sound, Ont., and make all necessary improvements to enable large steamers to load and unload at them, provided the town vote a bonus of \$15,000 as an inducement.

The Empire Elevator Company has been incorporated at Minneapolis, Minn., with a capital stock of \$500,000, by Herman W. Pratt, George W. Porter, John S. Pillsbury, Fred C. Pillsbury and Charles M. Amsden. The company's headquarters will be at Minneapolis.

H. Hause and other capitalists of St. Paul, Minn., will erect a malt house with a capacity of from 300,000 to 500,000 bushels, to cost \$100,000, at the Union Stock Yards in that city. John Addison, architect, Chicago, Ill., is now preparing the plans for the building.

The Lafayette Brewery being erected at New Orleans, La., is about completed. The building is 150x150 feet, and it will have a manufacturing capacity of 150 barrels per day. The motive power consists of two sets of boilers of 180-horse power each and a double Corliss Engine.

Since May 22, the opening day of navigation, 2,097,381 bushels of wheat have been shipped from the elevators at Port William, Ont. Nearly 59,000 bushels of oats were also shipped during the same period.

Montreal, Ont., grain men anticipate a big rise in the price of grain. One dealer, it is said, has over 200,000 bushels of Manitoba hard wheat which he declines to sell until he gets an offer of \$1.10 per bushel. This calls for an advance of 13 cents on the present price, but it is confidently predicted.

The Ottawa Free Press expresses the hope that the Canadian Pacific R. R. Company will have learned a lesson from their experience in regard to the grain crop in Manitoba and the Northwest last year, and will make suitable provision for transporting this year's yield, which it is stated will amount to 20,000,000 bushels.

The North Platte Milling and Elevator Company of North Platte, Neb., has filed articles of incorporation. They will buy, sell and store grain and manufacture mill products. The capital stock is placed at \$75,000, and the incorporators are John K. Ottenstein, M. A. Kith, John Pratt, William M. Holtry and M. J. Allum.

The grain elevators of the Chesapeake & Ohio Railroad are apparently not paying institutions, as President Ingalls of that road has proposed that the rate of interest on the securities be scaled down 50 per cent. This comes as a disagreeable surprise to many of the stockholders who had not been aware that C. P. Huntington was put-

ting up his own money to pay the interest. The elevators never have earned the interest only in a single period of six months.

The assignee of C. C. Wolcott, the Minneapolis grain dealer who recently made an assignment, has completed his schedule of assets and liabilities. The total liabilities are set at \$9,271. The assets are three elevators at Granite Falls, Atwater and Kandiyohi, all of them heavily mortgaged. The total assets are fixed at \$3,567.

Fullerton, Neb., is well supplied with grain elevators. The principal one is that of Fuller & Paton, which was established in 1883, and has a capacity of 40,000 bushels. The milling firm of Wheeler & Co. have a 20,000-bushel elevator in connection with their roller mill. Lumry Bros.' elevator was established in 1887, and has a capacity of 10,000 bushels.

T. N. Marfield, engaged in the milling and grain business at Chillicothe, Ohio, as Marfield & Co., made an assignment to Judge B. F. Stone, Aug. 2. Previous to making the assignment Mr. Marfield executed mortgages to secure preferred claims, amounting to \$109,895.83 to relatives. A schedule of his liabilities and assets has not yet been prepared.

The Herald of Sauk Center, Minn., in a recent issue, says: "The Minneapolis and Northern Elevator Company is fortunate in the selection of its local agent here. C. R. Tubbs is not only an efficient and expert wheat buyer, but he is a gentleman worthy of all confidence. No reasonable person will ever have any grievance with the manner in which he is treated at the elevator."

Neche, Dak., is having a boom in elevator building. A. Brass & Co. of Winona, Minn., have a force of forty men at work there on a 40,000-bushel elevator; the Northwestern Elevator Company of Minneapolis have just completed a large addition to their building at that place, and Charles Crawford, a merchant of Neche, will shortly begin the erection of a 30,000-bushel elevator.

The Northwestern Elevator Co. of Minneapolis, Minn., have placed an order with J. L. Owens & Co. of that city, for forty more No. 6 Separators, twenty-five of them to be used in new elevators now being erected on the Manitoba Road. They have also ordered a separator of 1,200 bushels capacity per hour, to be placed in their terminal elevator, and seventy-five grain testers.

Borden, Selleck & Co., 48 and 50 Lake street, Chicago, Ill., have an order from the Arkansas Elevator Company of Kansas City, Mo., for a Harrison Conveyor 250 feet long, capable of handling two different kinds of grain in opposite directions at the same time, with the same conveyor and no mixing of grain. The grain can be spouted from either line at intervals of every fifteen feet.

McKenzie & Winslow, Fall River, Mass., have ordered of Borden & Selleck, Chicago, Ill., a Harrison Conveyor 250 feet long, to be placed underground, passing under a street. An elevator is located on the river front, and with it is connected the conveyor, which not only carries 1,500 bushels of grain per hour from the river to the mill, but transmits the power from the mill to the elevator.

The Logan County Farmers' Exchange was organized at Lincoln, Ill., Aug. 11. The object of the organization is to make such arrangements that buyer and seller may get together, and to thus facilitate trade among the farmers. It is the intention to hold an open market at some convenient place in Lincoln once a month, on Saturdays, to which farmers may bring their stock, etc., and offer them for sale. An auctioneer is to be provided each day for that purpose. At the meeting of the 11th inst. John Critchfield of Broadwell was elected president; Dr. J. W. Collins of Lincoln secretary, and Charles Spicy of Lincoln, A. M. Caldwell of New Holland, and Fred Dittus of Chester, managers.

Col. Carson Lake of New York City, Herr Sigmund Switzer of Vienna, Austria, and Charles W. Ridgway, also of New York City, have recently completed arrangements in Minneapolis, Minn., for the establishment of a large pearl barley plant there under the new process hitherto used only in Vienna. The trio were in Minneapolis only forty-eight hours, and in that time they closed the contracts for the establishment of a business with a capital of \$250,000, and purchased a mill for manufacturing purposes. The Northwest raises most of the barley which is produced in this country, and as there are no pearling mills west of Ohio, the enterprise will most likely prove a great success.

The Government of Manitoba has not as yet signed the contract with the Northern Pacific Railroad Company, which provides that the latter is to purchase the Red River Valley Road, which the Government agrees to complete to Winnipeg, the consideration involved being about \$700,000. Among other things the railroad company agrees to construct a number of elevators at important points, and to spend large sums of money in this and other ways. A Winnipeg dispatch says it is stated that the Government has no intention of maintaining the Red River Road as an independent roadway, but will make a complete transfer to the Northern Pacific, requiring from the company only a guarantee of a certain maximum rate on wheat and certain other lines from this province to Duluth, where advantage can be taken of the keen competition in lake freights. This point is liable to provoke some indignation here, as it is understood to have been the policy of the Government to maintain the R. R. V. Road as an independent line. The statement made in a New York dispatch that harmonious relations had been established between the Northern Pacific and Canadian Pacific for maintaining rates and the purchase of the

Duluth, South Shore & Atlantic Road by the C. P. R., leads people to believe that Manitoba will not be much better off with two roads than with the C. P. R. alone.

A dispatch dated July 18 from Peoria, Ill., says: "The real estate belonging to the firm of A. G. Tyng & Co., grain dealers of this city, was to-day levied on by the sheriff upon an affidavit filed by Charles M. Weeks & Co. of Knoxville, Ill., who shipped the firm eleven cars of oats some weeks ago, for which they had not received any money. The levy by the sheriff in behalf of the Knoxville creditors was made just seventeen minutes ahead of mortgages covering the same filed by the First National Bank of this city, by which the bank would have become the custodian of the real estate. A. G. Tyng, the senior member of the failed firm, is noted as a daring oats speculator, this being his fifth failure. The total indebtedness caused by the five failures would foot up nearly \$1,000,000.

It was reported a short time ago that the Platte Center Elevator Co. of Platte Center, Neb., had filed complaint against the Union Pacific Railroad Company before the State Board of Transportation to the effect that the management of the road had been asked to provide for a site upon which to build an elevator at Platte Center. This the railroad company, it is said, refused to do, and the elevator company claims that their reason for so doing is that the Union Pacific Road and the Union Elevator Company own an elevator at Platte Center in which the former has a controlling interest. The railroad company, on the other hand, claim that they are not in any way interested in the grain business, and General Manager Kimball states that so far as his knowledge goes no request has been made for the purchase of ground, and much less does he know of his company having directly refused to sell ground upon which to erect a building. There seems to be an African in the fence somewhere.

The big Grandin wheat farm in Dakota comprises about 40,000 acres, of which 13,000 acres are under cultivation, 11,200 being sown to wheat. There are used on the farm forty-five gang plows (two plows in gang), each plow cutting fourteen to fifteen inches. There are forty-five gang harrows. These are six feet square, but are arranged together side by side to work twenty-four feet wide. One long evener draws the four with a pair of mules near each end. One man drives both teams. The advantage of this system is worthy of notice by other farmers. It reduces the number of men usually required by one-half. There are forty-four broadcast sowers, sowing eight feet each, but two of these are attached end to end, with a span of mules before each, and one man drives both spans—another saving of half the man force. There are sixty-five self-binding harvesters employed on the place. Modern improvements have so perfected these that only one "expert" is required for the whole, especially since the experienced workmen on the machines are kept from year to year, and they are able to attend to any little repairs. The harvesters are each drawn by three mules, and one and one half to two men are required to shock the bundles from each machine. The threshers, of which there are six, are quite extensive affairs, as compared with those of former times, or with the flails, or the animals on the threshing floor, or our boyhood. Each one of these machines, driven by steam power, threshes out from 1,900 to 2,000 bushels a day. They are set down in the center of a hundred acres of shocks, and when these are threshed, are moved to the center of another hundred acres. The working force on a single thresher forms quite a little army. Thus, there is first the general superintendent; eight "bundle teams" to haul the shocks, with eight drivers and eight other men, part in the field and part at the machine, as pitchers and unloaders. At the machine two men are required to simply cut the bands. There are three feeders, two at work and an alternate. Then there are the engineer, the fireman, the waterman, the "straw-bucker," who with two mules and a pole removes the straw accumulating before the machine, a barn man to care for the animals, and the cook and his assistant. The wheat is received into wooden tanks, holding 100 bushels each, and four men with four wagons drawn by four mules each—one tank wagon at the machine and three on the road—take the wheat to the elevators. This saves bags and bagging. It will thus be seen that there is a force of thirty men employed to run a single machine!

The English engineering press records the successful trials, some weeks ago, by the officials of the London & Northwestern Railway, of the plan of drawing canalboats with locomotive power. The trials were made on the Shropshire Union Canal. The account of the trial is so favorable to the new mode of propulsion that it is not unlikely that it may come into general use, should the report be confirmed. The following facts respecting this experiment have been published: "An eight-horse power locomotive engine was placed on the set of rails laid down at the side of the canal, and eight well laden boats were fastened to the engine and it drew them the length of the section. The aggregate weight of the boats was over 140 tons. The rails were only eighteen inches apart, and the engine oscillated a great deal with the somewhat irregular motion of the boats, the weight being apparently too much for it. It got along, however, at about four miles an hour. After returning with four boats much more steadily, it drew off six boats with equal success. The experiments were watched with great interest, and the engine and six boats were photographed. Altogether, the result of the experiment was regarded with evident satisfaction, and it is hoped that a considerable improvement in canal traffic will take place should the use of the locomotive take the place of the horse on the canal bank."



# THE AMERICAN ELEVATOR AND GRAIN TRADE.

—PUBLISHED ON THE FIFTEENTH OF EACH MONTH BY—

**MITCHELL BROS. COMPANY.**

(INCORPORATED.)

—OFFICE—

Howland Block, 184 and 186 Dearborn St.,  
CHICAGO, ILL.

Subscription Price - - - - \$1.00 per Year.  
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**A. J. MITCHELL,** - - - Business Manager.  
**HARLEY B. MITCHELL,** - - - Editor.

## ADVERTISING.

This paper has a large circulation among the elevator men and grain dealers of the country, and is the best medium in the United States for reaching this trade. Advertising rates made known upon application.

## CORRESPONDENCE.

We solicit correspondence upon all topics of interest connected with the handling of grain or cognate subjects.

CHICAGO, ILL., AUGUST 15, 1888.

## EXPORTS OF BREADSTUFFS.

The report of the Bureau of Statistics at Washington, issued Aug. 9, for the month of July, 1888, shows an increase in oats and corn, and a decrease in wheat and rye exports, as compared with the same month in 1887. The total value of the breadstuffs exported during July, 1887, was \$15,759,219, against \$7,881,794 in July, 1888. The value of the exports for the seven months ending July 31, 1888, was \$57,537,272, against \$100,418,048 for that period in 1887.

The exports of corn for the month of July, 1888, were 2,229,951 bushels, against 1,655,728 bushels in July, 1887. There were 54,502 bushels of oats exported in that month in 1888, as compared with 20,380 bushels for the same time 1887. The figures for rye stand at 500 bushels for July, 1888, against 5,887 bushels for July, 1887. The exports of wheat were 3,371,035 bushels in July, 1888, against 13,543,461 bushels in July, 1887.

## LOWERING THE LAKE LEVEL.

It has been objected that the proposed opening of the Chicago River into the Desplaines River of a waterway of such dimensions as to cause a flow from Lake Michigan into the Mississippi River of 600,000 cubic feet per minute would lower the level of Lake Michigan. Senator Sherman is reported to have made such a statement in the Senate the other day. That such a statement is absurd on the face of it must be apparent to every thinking man at all acquainted with the facts.

It is estimated that 15,000,000 cubic feet of water go over Niagara Falls every minute. Three-fourths of this vast quantity comes from Lakes Michigan, Superior and Huron. To abstract from this vast quantity 600,000 cubic feet would make no perceptible diminution in the Falls of Niagara. For, it must be remembered, that the three great lakes—Superior, Michigan and Huron—are practically one lake, so far as level is concerned, as they are connected by the straits at Mackinac, which are about three miles wide and a hundred feet deep. The level of Lake Michigan could not be lowered without lowering that of the other two great lakes. The Detroit River, again, is about 2,200 feet wide, with a depth of about twenty-two feet, and a current of nearly three miles an hour. Just figure up what dimi-

nution of this channel it would be to cut a channel from the Chicago River into the Desplaines 200 feet wide and of the same depth as the Detroit River. The abstraction of water so occasioned would not be noticed, scarcely, at Detroit, and not noticed at all at Niagara. The opponents of water communication between the lake region and the Mississippi Valley must find some weightier objection than that based on the lowering of the lake levels. The argument does not hold nearly so much water as do the lakes.

## THE BUCKET SHOP DECISION.

We print elsewhere in this paper the decision rendered by Judge Garnett of the Appellate Court, sustaining the decision of Judge Collins in dismissing the suit of the New York and Chicago Grain and Stock Exchange against the Chicago Board of Trade. We do not know how many suits are pending against the Board by bucket shops which claim the right to receive instantaneous information of the quotations of the Chicago Board of Trade, on the ground that they are public property. Suits almost without number were commenced against the Board, and probably all of them, if carried up, will receive the fate of the one in question.

The decision of the court holds, in brief, that the Chicago Board of Trade is a private corporation, and has the right to collect information and distribute it as it sees fit. If it chooses to withhold its information from parties not members or agents, it has an undoubted right to do so. The court holds that the fact that its quotations have become a powerful factor in fixing the prices of commodities has nothing whatever to do with the question at issue, which is, that the Board of Trade, as a private corporation for the benefit of its own members, cannot be compelled to give out information collected at its own expense, at the dictum of parties who are not members of the Board and who bear none of its burdens. The decision of the court is simply in the line of common sense, and establishes what every fair-minded person has conceded all along to be the right of the Board—to control its own quotations, and not permit them to be used as the basis for purely gambling transactions.

## THE IOWA RAILWAY CASE.

The decision of Judge Brewer of the United States Circuit Court in the suit of the Chicago & Northwestern Railway for an injunction against the railway commissioners of the State of Iowa has been very generally misunderstood. The court does not decide that the question of reasonableness of rates is to be determined by a jury. The questions of fact will be decided by the judge. Neither is it true, as has been assumed, that the order of the court is in favor only of complainants who have filed bills; it prohibits the enforcement of the schedule of the commissioners anywhere in the state as against any railway company. Finally, it is not true, as has been stated, that there is any disposition on the part of the railway companies to abandon the contest or to compromise on a schedule of rates.

In the first place Judge Brewer's decision is to the effect that the United States Court has jurisdiction because the real parties at interest are not the commissioners or the state of Iowa, but the shippers and the railroads. He then passes on to other questions. Following are, in substance, the objections to the Iowa law of last April relating to transportation rates: First, that the making of rates is a legislative power and therefore cannot be delegated to commissioners, as the law assumes to do. Second, that it imposes penalties without clearly defining the offenses. Third, that it conflicts with the provisions of the Iowa constitution giving a right of trial by jury on all questions of fact. Fourth, that in criminal prosecutions it deprives the accused of the right to be confronted by the witnesses against him. Fifth, that the penalties are excessive. Of these questions the first is the only one discussed, and the conclusion is that it was

competent for the legislature to delegate to commissioners the power to make a schedule of rates. As to the others Judge Brewer says: "In the view which I have taken of the case I deem it unnecessary, at least on this application for a preliminary injunction, to decide either."

As to rates, he holds that while the legislature may fix rates, or authorize commissioners to do so, those rates must be sufficient, taken as a whole, to provide the carrier with means to pay the cost of service, interest on bonds, and some dividend. In determining the cost of service it must be assumed that the highest order of skilled labor, the best appliances, the keeping of roadbed, cars and machinery in perfect order and repair must be furnished by the railway company. The opinion is expressed that the legislature cannot impair the obligation of the carrier and the right of the public to have the best service. The interest on the bonds of a company must be met, and the legislature cannot change the rate, as that is a matter of contract the obligation of which the state is forbidden by the constitution to impair. The right of the carrier to earn some dividends must be recognized, but it is not for the court to say what dividends—whether 1 per cent, or more—are reasonable. The legislature may fix the rate in the absence of any contract. If the rate is fixed too low the legislature and not the court must be appealed to for a change.

## TRADING IN "PUTS AND CALLS."

The Chicago Board of Trade has mildly disciplined over a score of its members, some of them the best known men in its ranks, for breaking its rules against trading in so-called privileges. That a mere reprimand was a light punishment for an alleged grievous offense will not be denied; nor will be controverted that if the punishment had been severer, instead of a score a hundred members or more would have had to be dragged before the bar of justice. The directors showed their good sense in not probing the matter too deeply or punishing the violation of the rule too severely; for when law-breaking or rule-breaking is so general, there must be some palliating reasons for it.

And undoubtedly there are. Those who do not understand the *modus operandi* of privilege trading, will find a full explanation on another page. Those who do, understand how puts and calls have become insurance to traders. That the system is a species of gambling cannot be denied; but like fire insurance, it is a species of gambling that can be made mutually profitable. The great trouble is that the sellers of puts and calls are speculators themselves on a large scale. When the business of selling them is large, these speculators take very good care to hold the market to suit themselves. Here is where the objectionable feature of the whole system comes in, and most of the traders on the Board believe that business would be better if privilege trading were suppressed. It is certain that the dealers outside of Chicago would be vastly benefited if puts and calls were a thing of the past.

On another page of this paper will be seen an advertisement of S. E. Worrell's Grain Drier, containing an excellent engraving of a large machine having a capacity of 5,000 bushels per day. These driers have been in successful operation in different parts of the country for six years, and have proved to be the cheapest and best grain driers in use. They not only handle damp grain at a trifling expense, but are equally efficient in removing the must and restoring the color to dry, damaged grain. The strong current of air used also carries off the chaff and dust. Already much of the crop just harvested is coming to market in bad condition, owing to the recent continued wet weather throughout the Western states. Most of this grain could be put in good condition or vastly improved by these driers, and at a large profit. We advise grain dealers to give this important matter immediate attention, for the probabilities are that a still greater proportion of bad order grain will soon be put on the market.



## Editorial Mention.

If you are going to build an elevator, read Mr. Abernathey's article in this issue.

THE Sioux City Corn Palace will be formally opened on Sept. 24, and will be closed Oct. 6.

If you have anything to sell, from a second-hand machine to a full-equipped elevator, advertise it in our columns.

WE want every grain man in the country to subscribe for this paper. Send in your dollar and we will do you good.

WE want practical men to write to this paper. Send in your contributions, irrespective of defective grammar or rhetoric.

In our last issue we stated that Bell Bros. were erecting an elevator at Fairview, Kan. The item should have read Belts Bros.

KANSAS CITY is making a determined effort to exact a little justice from the railroads in the matter of grain rates eastward.

NEW YORK canalboatmen think that the case against the Brooklyn elevator men is a made-up affair, and that their interests will not be looked after.

DETROIT seems to have a very large-sized grievance against the railroads, judging from its complaint before the Inter-State Commerce Commission.

NEW YORK papers complain that the McEvoy Grain Elevator law has been practically nullified at Buffalo, New York and Brooklyn by the elevator men.

It will be seen from the new advertisement in this issue, that English, Morse & Co., Kansas City, Mo., have succeeded the firm of A. M. Morse & Co.

AMONG our grain and commission cards this month will be seen that of a firm of young men who want the Boston agency for a reliable grain shipping house.

LOOK over this issue carefully. If you are not a subscriber, don't you think that you can get a dollar's worth of information from our columns in the course of a year?

ON July 1 the style of the well-known grain firm, E. R. Ulrich, Springfield, Ill., was changed to E. R. Ulrich & Son, by the admission of Edward Ulrich to partnership.

It is said that no lies have been told about the grasshoppers in the Northwest, but that, on the contrary, it requires a very robust man to tell the entire truth about the 'hopper visitation.

OUR Kansas City correspondent reports a great activity in elevator building in Kansas in the last couple of weeks. As soon as the uncertainty as to crops was dissipated, a universal demand arose for more elevator room.

SWITZERLAND has a series of military granaries which she keeps replenished from time to time, so that in case of a sudden emergency her army will not lack for food supplies. Switzerland raises less than a third of the wheat required by her people, and as her militia force amounts to half a million (one-sixth of the entire population)

and she is absolutely hemmed in by other nations, she has wisely provided that if she is ever whipped, it will be by force of arms and not by starvation.

PUT AND CALL trading is not a violation of the New York State law, though contrary to the rules of the New York Produce Exchange. The managers of the Exchange are determined to stop this seductive trading.

A notable article is published in this issue from the pen of E. Lee Heidenreich, M. E., on Hemp Rope Transmission. It will pay every practical man to read this article thoroughly. Great things are to come from rope transmission.

HUGH J. CAMPBELL of Dakota dreams of a time when Dakota shall have water communication not only with the Mississippi but also with the Great Lakes. Mr. Campbell may be way ahead of his time, but it is better to look forward than look backward.

LATE rains have probably saved thousands of acres of corn throughout Missouri and Kansas. The crop seems to be pretty generally assured in these two states now. The corn yield in Kansas is nearly certain to reach the 250,000,000-bushel mark this year.

IT is possible that our Canadian friends may find that the best way to secure a fair share of business is not to discriminate against American vessels and ports. A number of influential Canadian papers have pronounced against the narrow-minded policy now pursued by the Canadian Government.

THE Ohio Canal Commission expects to reclaim a good deal of land, which it is alleged is now used in numerous instances without rental to the state, while owned by the state. This is said to be the case with many factories and other valuable plants in Toledo, Akron, Dayton, Middletown and other places.

LUMBERMEN in the Northwest report a large demand for elevator material. A month ago, elevator lumber, "cull dimension," as it is called, was a drug on the market. The demand for this material commencing two or three weeks ago shows that a good many more elevators are being built and finished than was anticipated.

EVER since it was deemed possible that British millers might secure some of our Northwestern hard wheat through the Scandinavian Elevator Company, British papers have been loud in their praises of the excellence of American hard wheat. Now that the project bids fair to prove abortive, we presume the old song dictated by sour grapes will be in order.

It is said that the Northern Pacific Railroad Company is considering terms of agreement with the Provincial Government of Manitoba by which the Northern Pacific is to be made an American outlet for traffic with Manitoba. This will send Manitoba wheat to Duluth or to Chicago. The Government will build branch lines to meet the Northern Pacific's branch lines at the frontier, and the Northern Pacific binds itself, it is understood, not to enter into any pooling arrangement with the Canadian Pacific.

JOHN A. CRANE, for the use of himself and Cook county, Ill., sued John C. and Joseph T. McCord, Chicago Board of Trade men, in the Superior Court, Aug. 9, for \$150,000. William O. Mansing is cashier of the National Bank at Waverly, Ill., and he has forwarded the McCord firm \$40,000 from time to time to invest in grain for him. Mr. Mansing claims that they dealt in fictitious deals instead of dealing in actual trades as he had requested. The transactions, therefore, became gambling ones, and the money being lost, three times the amount may be recov-

ered under the law. Mr. Crane is a friend of Mr. Mansing, and if he recovers anything one-half of it goes to Cook county, which explains the making of Cook county a party plaintiff in the action.

ST. LOUIS merchants are all worked up over the attitude of Congressman Glover in regard to the St. Louis Merchants' Exchange. He seems bent on proving that it is a gambling hell. Mr. Glover evidently will have to look after his fences this fall. St. Louis merchants very properly object to the classification which Mr. Glover has awarded them.

PROFESSOR SERING, a distinguished German authority, in a work recently published, gives it as his opinion that American cereal production chiefly controls price quotations, owing to its influence upon the most important grain market of the world, England. That country uses continually about seven-tenths of America's export. Not only those countries which import, but those which export grain, are controlled by the quotations of the English market. The professor does not approve of Germany's present tariff system as applied to grain, and is of the opinion that in agricultural industry and in the business adaptation of the same to the requirements of the market, Germany is behind America.

THE stocks of grain in Chicago elevators last Saturday evening were 4,958,589 bushels of wheat, 2,457,227 bushels of corn, 318,131 bushels of oats, 41,920 bushels of rye, and 31,911 bushels of barley. Total, 7,807,778 bushels of all kinds of grain, against 10,173,795 bushels a year ago. For the same date the Secretary of the Chicago Board of Trade states the visible supply of grain in the United States and Canada as 25,228,362 bushels of wheat, 8,539,599 bushels of corn, 1,767,117 bushels of oats, 177,319 bushels of rye, and 145,789 bushels of barley. These figures are larger than the corresponding ones a week ago by 2,217,299 in wheat, and smaller by 460,305 in corn. The visible supply of wheat for the corresponding week a year ago decreased 921,979 bushels.

THE case against Edward Annan and Francis E. Pinto of Brooklyn, for violating the McEvoy Grain Elevator Law, went over until the third Monday in September. The attorney for Messrs. Annan and Pinto said: "We are glad to get face to face with the canal boatmen, in whose interest this adjournment is asked. The canal boatmen have already had an extended argument before the Governor, and that, we think, ought to suffice. They have seized by the throat the business of elevating grain in Buffalo, and also in this port, and it is very important that a decision should be had at the earliest possible day. We want to get at the Court of Appeals as soon as possible. It is not only whether we shall get five-eighths of a cent a bushel, but whether we shall do any business at all."

THE President has allowed the River and Harbor Bill to become law. The bill, as it had passed the House, appropriated \$19,902,783. As agreed upon in conference it aggregates \$22,277,116, being a net increase of \$2,374,333. The Senate amendment for the purchase of the improvement known as the Green and Barron river improvement was agreed to. The Senate receded from its amendment providing for the purchase of the Portage Lake Canal and the Lake Superior Ship Canal Railway and Iron Company Canal. The Senate amendment providing for a survey and location of a canal from the Illinois River at or near the town of Hennepin to the Mississippi River was agreed to; also the Senate amendment for a survey of a canal connecting the waters of Lake Michigan with the Calumet River. But the Government is not to be deemed committed to these projects nor indeed to any other project for which a survey is ordered in this bill, as will be seen by the following clause, added to that section of the bill making an appropriation for examinations, surveys, contingencies, etc., viz.:



"And provided further that the Government shall not be deemed to have entered upon any project for the construction or improvement of any waterway, harbor, or canal mentioned in this bill unless or until the work of construction shall have been actually appropriated for."

## BUSINESS ON THE SAN FRANCISCO PRODUCE EXCHANGE.

In his annual report to the Produce Exchange, President Dalton made a number of statements in regard to the business done on the Exchange. From his report we extract the following:

"From statistics now complete the wheat crop of 1888 in California amounted to, say, 865,000 short tons. This result is about what was indicated by the crop reports published by this Exchange last spring. I regret to say that for various reasons the collecting of such reports for this crop was discontinued, but I hope that the incoming board of directors may see their way to renew the collection and dissemination of that which must be of information to all members of this Exchange. The crop now claiming the attention of the farmers, owing to drouth during the month of April, will be much short of estimates made in March, but unprecedented cool weather in May and June, aided by timely showers, made a marked improvement in the general condition, so we may expect not as great a shortage as was at one time anticipated. The business transacted at the sessions of the Call Board during the twelve months ended June 30 was as follows:

Wheat, tons.....	973,000
Barley.....	1,083,000
Miscellaneous.....	2,800
Grain bags, number of.....	4,510,000

"These figures show a striking reduction from the business of the previous twelve months, the principal loss being in wheat. The large volume of business noted a year ago was due to over-speculation, and the natural result of such speculation was disaster, bringing in its train want of confidence and dull times. On the 3d of August, 1887, by order of your board of directors, all business of the Call Board Association was suspended for eighteen days. While it is to be hoped that resort will never again be made to such an unusual course, I feel confident that it was for the best interest of the Exchange and of all its members. The storm has long passed away, and, although its evil effects may now and then be noticed, I can congratulate the Exchange on emerging from such a trying ordeal with its colors flying and with a front so strengthened and entrenched that it can defy all the calumniations of its enemies and be a safeguard and support to all its friends."

## THE CORN CROP.

The importance of the corn crop in its effect upon the prosperity of the country is often lost sight of in considering the value of our wheat crop. The fact is, says a New York paper, that the latter cuts but a small figure as compared with the former. The relative value of corn or wheat per bushel is now about 50 to 90 cents. The wheat yield this year may be roughly estimated at 420,000,000 bushels, worth, say, \$378,000,000. The yield of corn will probably approximate 2,000,000,000 bushels, worth, say, \$1,000,000,000. These figures show the relative importance of the two crops. Again, it should be remembered that the average yield of corn per acre is from twenty-two to twenty-five bushels, while wheat averages about twelve bushels. At the prices which have been ruling recently the value of corn per acre will average about \$12, while wheat will barely average \$11 per acre.

Corn is therefore by far a more important crop than wheat, and the excellent prospect of a big corn crop this year is one of the most favorable features of the crop situation. During the past week there has been the same favorable conditions affecting corn that have been noticed for several weeks. The Cincinnati *Price Current* says:

"With sufficiency of moisture and seasonable conditions otherwise for a few weeks, the crop may be confidently expected to equal the production in 1885, or to exceed it; in that year the area was about 2,300,000 acres less than planted this season, according to indication of official estimates, and yielded an average of 20½ bushels per acre for the entire country. This season's gain in area, compared with 1885, is greater in the South than in the Western group of corn-raising states—the latter representing about 700,000 acres, or about 1½ per cent., and the former 1,600,000, or 7¼ per cent. The present outlook appears to be for a crop of about 1,950,000,000 bushels, on continuance of favorable conditions."

"Taking the area of the corn crop harvested in 1886, an application of the estimates of the different states as reported by the Department of Agriculture in July, 1887, resulted in about 77,985,000 acres, as representing last year's planting. The returns of area harvested are stated at 72,382,720 acres, or 5,592,000 acres less than were planted. Applying the estimate of this year's planting to harvested area in 1887, the indicated planting this season is 75,430,000 acres, a gain of 2,037,000 acres compared with last year's crop harvested, but a decrease of 2,555,000 acres compared with last year's planting."

With a view of showing the indicated area of corn planted and harvested last year, compared with this

year's estimated planting. In leading states and for other portions of the country, the *Price Current* submits the following compilation:

	Planted. 1887.	Harvested. 1887.	Planted. 1888.
Ohio.....	3,017,160	2,805,961	2,974,320
Indiana.....	3,757,890	3,569,994	3,891,290
Illinois.....	8,644,625	7,847,915	7,715,310
Iowa.....	8,085,560	7,191,148	7,483,990
Missouri.....	6,743,985	6,406,785	6,598,990
Kansas.....	6,393,875	5,242,979	5,609,985
Nebraska.....	4,111,870	3,865,158	4,097,065
Minnesota.....	681,750	606,756	624,960
Dakota.....	795,150	636,120	737,900
Wisconsin.....	1,131,975	1,018,778	1,059,530
Michigan.....	967,080	841,316	900,210
Kentucky.....	3,551,310	3,160,668	3,255,490
Tennessee.....	3,569,230	3,497,848	3,637,760
Total.....	51,451,410	46,196,426	49,586,800
Southern States, 12.....	23,276,390	22,995,758	23,638,175
Middle States, 4.....	2,725,520	2,667,428	2,672,180
New England States.....	264,310	263,917	263,245
Others.....	269,170	269,191	270,000
Aggregate acres.....	77,986,800	72,392,720	75,430,406

The area planted this year is about 2,300,000 acres greater than the acreage harvested in 1885, and the present outlook indicates that the acreage harvested this year will be in excess of that of 1885. In that year the yield was 1,936,176,000 bushels, and, barring unforeseen mishaps, there is little doubt that the yield this year will be larger than that of 1885, and we will not be surprised should the crop turn out a round 2,000,000,000 bushels. This will furnish big business for the railroads, for it will mean an increase of more than 540,000,000 bushels over last year.

## WHEAT AND CHESS.

There are countries where wheat is raised, but where chess is entirely unknown, this plant not having been introduced there; and consequently when wheat is winter-killed, no chess follows. We have known some farmers who have succeeded in entirely eradicating it from their farms, and we could never find a grain of chess on a rigid examination of their grain; yet their wheat was sometimes winter-killed. Chess is stunted and rendered invisible to superficial observers when densely shaded with a heavy growth of wheat, in some instances ripening seed when the plants were only two inches high. But where the wheat was killed from any cause, the chess plants have sprung up three feet high in the space thus made for them, and borne thousands of seeds. Wheat and chess are two entirely distinct genera of plants, wheat being a *Triticum* and chess a *Bromus*, which are so unlike that one cannot change to the other, any more than a wild cherry can change to a choke pear. No instance has ever been known where plants of one genus have changed to those of another, and if it could take place the vegetable creation would soon become a mass of inextricable confusion. Some years ago one of the editors of the *Country Gentleman* offered \$500 for three months to any one who would produce a plant part way changed from wheat to chess, on the ground that if such changes were constantly taking place a single plant might be found in a transitive condition among the countless millions all over the country. But not a single claimant applied, in the face of a smaller penalty in case of failure or attempted imposition. The before mentioned causes show how easily inaccurate observers have been misled in this matter. The seed of chess is easily scattered into soil, by inconspicuous growth in manure, in seed not wholly clean, and in other ways. The adoption of the error has deterred some farmers from taking sufficient pains to clear their land of this weed, as others, more careful, have successfully done—*Country Gentleman*.

## WEEDS INJURIOUS TO WHEAT.

The weeds that principally injure wheat are cockle (*Lychnis githago*), chess or cheat (*Bromus secalinus*), pigeon weed or red root, steenbrout, strong seed, wheat thief (*Lithospermum arvense*) (chiefly in spring wheat), field mustard, or charlock (*Sinapis Arvensis*), vetch, or black pea tare, wild radish, also called charlock. These are all annuals, for perennial weeds are confined to no particular crop. Cockle is a strong-growing, upright plant, reaching from 1 to 2½ feet in height, with a purple flower and seed pod full of black seeds. It injures the wheat chiefly when ground for flour, discoloring it and imparting to it an unpleasant, bitter flavor. Chess is a species of grass. There are two other species of the same genus indigenous to the United States, and two more introduced from England. The leaves and stalks in their earlier stage greatly resemble those of wheat, but the flowers, stamens and seeds are very different. It grows chiefly in soil plowed in the fall, but is also met with in meadows and among spring crops where no wheat was ever sown. It is probably a native of most parts of the Northern states, and, like other weeds, the germs are contained in the soil, ready to vegetate as soon as the conditions of growth are favorable. The seeds are very numerous. Seven thousand kernels have been counted growing from one root, enough to seed 300 acres the third year, were it cultivated. They are also very difficult to destroy, passing through animals and fowls without losing the germinative power. It was formerly as plentiful in England as it is with us, but by care in sowing clean seed it is now all but exterminated.



Memberships in the Chicago Board of Trade have fluctuated between \$1,500 and \$1,550.

Tickets of membership to the New York Produce Exchange have been selling as low as \$1,350.

The Chicago Open Board of Trade has taken strong ground against privilege trading, and one day lately business in that line was entirely suspended.

Quite a sensation was created by the report that the tower of the Chicago Board of Trade was unsafe. Architect Boyington says that the report that the tower is likely to topple over is clear nonsense.

One of the new rules of the Milwaukee Chamber of Commerce is intended to put a stop to all trading before and after Board hours, and provides a fine of \$10 on any member who offers to sell or buy outside of the exchange room.

On Aug. 8 the New York Produce Exchange hauled up four members before the complaint committee to answer to the charge of trading after hours. They pleaded guilty. The managers say they intend to put a stop to this kind of trading.

The Board of Trade directory is making arrangements to get New York Produce Exchange quotations by direct wire instead of by its ticker, as at present. Complaint is made that by the present system quotations are frequently from twenty minutes to thirty minutes old when they are posted, and practically useless.

The bucket-shop war still wages in Canada. A number of bucket-shop keepers and frequenters were tried in Toronto on the 2d inst., and were found guilty and fined in sums ranging from \$20 to \$100 and costs. All the evidence showed that the sole object of the establishments was to afford people the opportunity to buy and sell stock without money. The case will be appealed. A prominent lawyer of Montreal, being asked what he thought about the city attorney's expressed opinion that it was doubtful if under the recent act a conviction could be obtained in that city under the new system of carrying on the business, replied: "The bill is plain enough. The point is as to whether it is a matter for the city to interfere in at all. I think not. It is exactly similar to any case of stealing or swindling, in which it is not the duty of the city to take the initiative, but of the party swindled. There must be direct evidence, not mere suspicion, and how can a policeman give this? It must be some private citizen who can speak positively as to a contract in a bucket shop, and who should be public-spirited enough to come forward and lay an information, in which case I shall be surprised if the bill is not found quite equal to the case."

The Chicago Board of Trade directors reprimanded twenty-nine of its members for dealing in puts and calls. Among the prominent members who were called and found guilty were Ream, Lindblom, and Roach, and they went in with the others, with very good grace, to get their medicine. They were told by the president, after having all pleaded guilty to the offense charged, which was a violation of section 9 of rule 4, that it was the firm determination of the Board to stop the practice of trading in puts and calls. They had the promise of a hundred or more of the prominent members that they would co-operate with them to the fullest extent to put a stop to the pernicious practice which was not warranted by the rules of the Board or the laws of the state. The sentence of the board of directors would be that they be censured for their action now, and that any future trading in puts and calls was to render the offender liable to expulsion. The Board also made announcement of the fact that hereafter trading out of hours would render the parties to it liable to suspension. With regard to Crafts, was suspended for a year for trading in puts and calls, and Canter and Cowles, who each got six months suspension for the same offense, the Board announced that it had decided to withdraw the penalties and place them on the same footing as the rest. Secret committees were appointed to carry out the work of the Board in this particular, and they will go at once to work upon it.

The American Cotton Seed Oil Trust held its annual meeting Aug. 1, with President J. H. Flagler in the chair. He announced that from the 163 companies forming the trust he had received the most satisfactory reports. The outstanding certificates of the trust represented a capital of \$42,183,285.33. The net earnings for the past year were \$2,371,376.34; expended for improvement or betterments, \$350,931.71; balance for the year, \$2,020,445.63. No dividend was declared, the surplus earnings being reserved for use in furtherance of the purposes of the trust. The following trustees were elected: For three years—J. H. Flagler, Jay O. Moss, Samuel Thomas. For two years—Jules Aldige. For one year—N. K. Fairbank, W. P. Anderson, J. H. Kendall. They elected the following officers: J. H. Flagler, president; Jay O. Moss, treasurer; W. P. Anderson, secretary; Jules Aldige, first vice-president.



## THE LAW.

### Marine Insurance—Actual Total Loss.

There may be an "actual total loss" of a vessel within the meaning of that term in a marine insurance policy, although the vessel remains *in specie* where it is notwithstanding irretrievably lost to the owner. So held by the New York Court of Appeals in the case of Carr vs. Providence Washington Insurance Company, reported in the *Central Review*.

### Bill of Lading—Carrier—Delivery.

By the terms of a bill of lading certain goods were consigned to the order of the consignee, the bill was indorsed in blank, and was negotiated as security for a draft drawn by the consignee on a third person. The Supreme Court of Georgia held, in *The Boatmen's Savings Bank vs. Western & Atlantic Company*, that a common carrier had no right to deliver the goods to such third person without the production of the bill of lading or authority from the holder thereof.

### Limited Partnership Certificate.

The New York Court of Appeals held in the case of the President and Directors of the Manhattan Company vs. Phillips, that there was no material variance between the certificate of formation of a limited partnership expressing the nature of the business to be a general commission business, buying and selling grain, flour and produce on commission, and a published notice stating the business to be "for the purpose of conducting a general commission business." The court held also that where the certificate of a limited partnership was recorded on Oct. 1, but was not published until Oct. 10, there was still compliance with the statute requiring partners to publish the terms of the partnership when requested for at least six weeks "immediately" after the recording of the certificate.

### A Bucket Shop Case.

The Chicago Board of Trade won one of its so-called "bucket-shop" cases through a decision rendered in the Appellate Court by Judge Garnett July 18. The decision was in the case of the New York & Chicago Grain & Stock Exchange against the Board. It lays down a principle of vital importance to the Board of Trade, which applies not only to the New York & Chicago Grain & Stock Exchange but to all the other "bucket-shops" as well. Judge Garnett's ruling is that the Board of Trade is a private corporation conducted in the interests of its members, and that it can withhold its quotations from any one it sees fit.

Before December, 1885, the New York & Chicago Exchange received the quotations. Then the "bucket-shop" war broke out. The Board cut off quotations from the exchange and made a contract with the Western Union and the Gold Stock Telegraph Companies by which they furnished prices current to persons designated by the Board. The Board then undertook to take from the New York & Chicago Exchange its quotation ticker. The exchange secured a preliminary injunction preventing this, and on the final hearing of the case the injunction was dissolved and the exchange's suit was dismissed. The exchange appealed to the Appellate Court.

Judge Garnett, who writes the opinion for the upper court, affirms the action of the lower tribunal dismissing the exchange's bill. He said the case presented the question: Has the Board of Trade of the city of Chicago the right to collect the market quotations through its employees and send them to the telegraph offices as private dispatches intended for persons named as its correspondents, such action being in effect a suppression of the quotations from those who are not correspondents? The court decided that the Board had such a right. His decision was as follows:

"The Board of Trade was organized as a private corporation in 1859, and has continuously conducted its affairs for the benefit of its members only, having no pecuniary interest in the operations taking place on its exchange. Its charter is framed in the form of an ordinary private corporation in whose affairs no one is especially interested except its own members. It has grown into an institution of vast commercial influence, and the quotations of prices coming from its exchange may be justly regarded as a potential factor in fixing market values of the necessities of life.

"The growth of the corporation in power and influence does not, however, change its character. It has the right to collect the market quotations or refuse to do so. Having chosen to procure this information it may dispose of it as its board of directors may order. The members being charged with the expense should, in all fairness, have the advantage of controlling its distribution.

"The market news is accessible to the producer and consumer through their agents. The instantaneous news which the Grain & Stock Exchange contends it has the right to receive may not reach the principal except by the slower methods of newspaper publication, but his representative, the broker, is at all times in immediate con-

tact with it, and is bound to use it to the best advantages of his principal.

"There is no just principle which can deny the directors of the Board of Trade acting as trustees for the members. The individual business of the members is of a private character; the aggregate business of the members is not of a different character."

## THE WORLD'S WHEAT SURPLUS.

Report of the Commissioner of Agriculture.

Buyers and sellers of wheat are in continual doubt and difficulty as to the effect of good and bad crops and increase or decrease of area. It has more than once happened that prices have been high when our crop has been large, and low when the product has been small. The cause is no mystery; the law of supply and demand has not been violated, but price has conformed strictly to the supply of the world. Hence the size of our own crop is of no special consequence except as a factor of the aggregate supply. This country produces more than one-fifth of the wheat of the world; Europe more than one-half, and the entire deficiency of the world, not mentioning unconsidered trifles which commerce carries to a few wheat-eating people in distant ports, is found in Western Europe, mostly in Great Britain.

An analysis of the official statistics of Great Britain shows where needed wheat has been obtained, and in what proportion each country is a factor. It will perhaps surprise many to learn that for this period, from 1872 to 1884 inclusive, the United States has furnished in grain and flour 51.1 per cent. more than one-half of the whole, and for the sixteenth year, 1887, the proportion has increased to 62.7 per cent. Russia in fifteen years averaged 13.6 per cent. of the whole, and for the year 1887 only 7.1 per cent. India contributed an average of 7.9 per cent. and for the year closing 10.9 per cent., which is the smallest percentage in the last five years, and a very sharp decline from the previous year in absolute quantity. Australasia is quite fluctuating in its contribution, averaging 3.9 per cent. for fifteen years and 1.7 per cent. the sixteenth, sending less than a million hundredweights one year and five millions another season. These three competitors of the United States have altogether furnished only 25.4 per cent. less than half as much, during fifteen years, and a much smaller proportion the past year.

The following table shows the proportion sent by the four main sources of supply, the remainder, though aggregating nearly as much as Russia, India and Australasia together, gathered from many countries of Europe, Asia, Africa and the Americas:

Years.	United States.	British India.	Russia.	Australasia.	All other countries.	Total.
1872.	cwt. 9,674,949	161,915	17,638,977	536,130	19,321,475	47,612,896
1873.	21,775,110	174,350	16,938,997	2,091,504	17,329,236	49,322,693
1874.	27,206,052	1,074,390	15,788,976	1,156,599	14,086,602	50,512,621
1875.	26,372,151	1,334,390	10,157,847	1,265,747	20,416,502	50,512,621
1876.	22,923,403	3,296,375	8,911,788	2,842,634	11,690,467	51,904,437
1877.	23,588,169	6,166,079	11,008,917	431,109	11,371,385	53,565,660
1878.	44,619,619	1,890,381	8,117,455	1,561,003	12,571,385	73,001,753
1879.	44,783,100	3,293,144	2,069,753	2,201,603	17,870,458	68,151,814
1880.	43,609,072	3,293,144	9,070,912	3,611,363	10,801,440	71,311,633
1881.	41,888,181	8,408,710	13,463,308	3,084,288	14,444,077	81,890,564
1882.	40,216,839	11,348,888	13,463,308	2,704,102	16,536,928	84,270,067
1883.	33,561,632	7,800,881	9,320,430	3,604,032	11,742,841	66,170,823
1884.	38,997,721	12,773,200	12,082,801	3,448,388	12,630,948	81,259,918
1885.	38,997,721	14,027,143	9,745,925	824,504	11,201,979	83,797,270
1886.	498,090,449	76,880,078	132,316,944	87,665,834	229,479,880	974,883,185
1887.	51.1	7.9	13.6	3.9	25.5	

The actual quantity imported by Great Britain averages 121,256,572 bushels per annum for fifteen years (counting bushels at 20 pounds), of which the United States has contributed 929,656,838 bushels, or an average of 61,977,122 bushels annually. Stated in bushels, for other countries, the record is:

Countries.	In fifteen years.	Average.
	Bushels.	Bushels.
United States.....	929,656,838	61,977,122
Russia.....	246,991,629	16,466,109
India.....	143,528,146	9,568,543
Australasia.....	70,309,557	4,687,304
Other countries....	428,362,405	28,557,494
Total.....	1,818,848,575	121,256,572

The share contributed by Russia has been very varia-

ble. It was largest in the first year of the fifteen, and ranges from 3,000,000 to 18,000,000 hundredweight. It has recently been less than in former years.

The increased receipts from India since 1882 have given false impressions of the importance of competition from that quarter. The commercial press has become especially excited over the temporary movement which has already been retarded for lack of export wheat. Three or four years ago there was a small increase of acreage, a million or two above the normal 26,000,000 which had been seeded from time immemorial, which has already been partly given up.

There is small prospect of increased exportation for India, except by slow degrees, and subject to frequent lapses by reason of poor crop years. The natives still work for a few cents per day, plow with a stick, thrash in the primitive fashion, and market dirt and seeds of weeds with the grain. The habits and prejudices of centuries still cling to them. Their food is still rice and millets, and few of them know the taste of wheat. In numbers four times as many as the people of this country, they have less than 27,000,000 acres in wheat, which is eaten mainly by Europeans in India. Under present conditions there is little land to spare for extension of wheat culture. It could be done by infusing Occidental progressiveness into beings steeped in Oriental inertia from time immemorial, teaching them a new agriculture, training them in the use of modern implements, and doubling the products of agricultural cultivation, thus releasing lands for new industries. These changes, if sudden, would be miracles. There is scarcely a people on the face of the globe less likely to change their industrial status suddenly.

## ITEMS FROM ABROAD.

The international grain market opens at Vienna on Aug. 27.

The Argentine Republic and Chili will have a surplus probably of 6,000,000 to 10,000,000 bushels of wheat.

The tariff bill passed some months since by Sweden makes the duty on wheat, rye, maize and barley 67 cents; on oats, 26.8 cents, and on bran 8 cents per 220½ pounds.

In spite of the high tariff on wheat and flour into France, the value of the imports during the first six months of the present year has increased 32,000,000 francs, while the exports have decreased 7,000,000 francs.

The advices from France are so unfavorable as to the wheat harvest that it is estimated that there will be a deficiency in her wheat crop of 35,000,000 hectoliters, or about 98,000,000 American bushels. This is about one-fourth of the whole wheat crop of France.

Belgium, Holland and Denmark have promise of an average crop of wheat in 1888. The average net imports of two of these countries for the period of ten years has been: Belgium, 15,954,873 bushels; Holland, 7,523,354 bushels, and Denmark, 2,119,047 bushels net exports.

La Plata wheat and maize exports in May, 1888, were 590,837 bushels of wheat and 1,611,041 bushels of maize. The home consumption is large in view of the small crop of maize, especially for horse feed in the cities. Some of the La Plata maize is marketed in Brazil. The expected exports for the remaining part of the season are small.

Prince Bismarck, as Prussian Minister of Commerce, has sent a circular to the leading members of the Berlin Produce Exchange, setting forth in general terms new conditions for the regulation of the sale of corn. These conditions, which will come into force from Oct. 1 next, refer to the quality and weight of rye and wheat for future delivery. The normal weight of rye is fixed at seventy two kilograms per hectoliter, instead of seventy as at present. Russian rye is, moreover, no longer to be dealt in for future delivery.

The exports of wheat from St. Petersburg for the week ended July 14, 1888, were 16,800 bushels, and since the opening of navigation 397,200 bushels, against 1,750,080 bushels in 1887, 2,323,360 bushels in 1886, and 5,230,000 bushels in 1885 for the corresponding period. The exports of oats from St. Petersburg for the week ended July 14, 1888, were 1,401,120 bushels, and since the opening of navigation 7,916,560 bushels. The exports from Liban and Riga have been more than from St. Petersburg. There oats were cheap, and displaced corn in the United Kingdom to a considerable extent.

The Italian wheat crop in 1888 is reported to be deficient. If it is as much deficient as the early estimates make it Italy will require as large imports of foreign wheat as in any year of the last three. The Austro-Hungarian wheat crop of 1888 is probably somewhat under average. The surplus of the 1887 crop was placed at 20,000,000 bushels, of which upward of 13,000,000 bushels have been exported in the period from Aug. 1, 1887, to May 1, 1888, leaving about 7,000,000 bushels then available for export. The Russian wheat crop promises to be larger than the large crop of 1887, but the Russian rye crop will not be nearly so large as the 800,000,000 rye crop of 1887. Russia will have a large surplus of wheat for export in 1888 if no misfortune should happen to her crop of 1888, which is now about ready for the harvest.



## WATERWAYS

A canal across Italy is being planned, to connect the Adriatic and the Mediterranean. It will begin at Fano.

The eastward movement of flour and grain from the West through Buffalo, for the month of July, 1888, showed an increase of 1,600,469 barrels in receipts of flour, and decrease of 2,191,915 bushels in receipts of grain. Compared with the same month last year, the receipts of flour were the largest in the history of the trade, being 1,947,070 barrels for the month of July.

Dominion government engineers are at work completing the surveys for the new Soo Canal. A dozen different lines of location have been run. The best of these will be chosen. It is understood that no insurmountable engineering difficulties are to be overcome, though from the rocky nature of the ground the expenses will naturally be heavy. The canal will only be a few hundred yards in length and there will be but one lock. It is stated on authority that invitation for tenders for construction of the canal will be issued shortly by the department.

Captain Marshall estimates that the expenditure of \$587,500 will carry a channel seven feet deep at low water mark from the mouth of the Illinois River to LaSalle; in other words, that this expenditure, added to what the state of Illinois has expended, would complete 233 miles of the proposed route, leaving 100 miles still to be done. A further expenditure of \$3,500,000 would carry it to Joliet, sixty miles further east. There is no good reason for dilly-dallying with this matter, the greatest and most necessary of all the now pending internal improvement projects.

About thirteen hundred feet of the Miami Canal is covered by the Cincinnati Exposition Building, and the managers are trying to disguise the old and odorous ditch by representing it as a street in Venice with its gay gondollers. But business is business, and in the pursuit of the same, now and then the proverbial mule puts in his appearance with a big tow-line connecting him with an old fashioned canalboat, where the cook is seen, as usual, "sassing" the hands and throwing slops in the "canawl." It is a curious scene, and should be witnessed to be appreciated.

Captain Marshall has submitted his report on the Chicago harbor, the Illinois River improvements, and the Calumet harbor. He thinks favorably of the concrete of Portland cement, backed by domestic cement, used for breakwater purposes, and asks a total appropriation for the harbor in 1890 of \$372,000. This is a moderate estimate. The government should have no hesitation in making all necessary appropriations for the improvement of this harbor. The duties collected at this port amount to \$5,000,000 a year, and a great deal of our commerce is strictly domestic. More steamboats and sailing vessels clear at this port than at any other in the United States.

The Montreal Gazette, the special organ of the Dominion Cabinet, advises the ministers to remove any pretext for proposed discrimination by the United States against Canada's canal tolls, and says: "If the alternative comes to be presented to Canada of making free all produce passing from Lake Erie through the Welland Canal, or imposing a toll on all alike, no matter what was the destination, it will be prudent to abolish tolls. In that case grain for Canadian ports on Lake Ontario will be relieved of tolls as well as grain for American ports intended for local consumption, while if the full rate of 20 cents a ton is exacted the ability of the St. Lawrence to compete with the Erie will be destroyed, and we shall be retaining a small toll at the expense of the transportation interests and to the loss of the business upon the retention and growth of which the prosperity of the St. Lawrence highway largely depends."

The plan of making a waterway from the bend of the Illinois River at Hennepin to the Mississippi River was first proposed in 1866 by a surveyor who had investigated the route. The line was surveyed in 1870, but nothing was done about it. In 1882 the project had so far assumed definite shape that a survey of the route was provided for by an act of Congress. Since then a bill for the appropriation of money needed to begin the actual excavation of the canal has been before each session of Congress, but has not yet been carried through, owing to a very unreasonable opposition on the part of some members from other states—unreasonable because the construction of the line would be an undoubted advantage to the entire commerce of the West and Northwest. The Hennepin Canal, as projected, begins in the Henry Pool, twelve miles west of LaSalle, rising 205 feet to the summit in eighteen miles; at the twenty-sixth mile a navigable feeder thirty-seven miles long reaches to the Rock River at Dixon. From the feeder junction two lines have been surveyed; the Marais d'Osier line, the most northerly, and somewhat the shorter line, and the Rock Island line, which follows a course some miles south of the other. The Marais d'Osier line extends Northwest from the junction to the Mississippi above the Rock Island Rapids, near Albany. The descent from the summit is seventy-five feet and the distance sixty-four miles from the Illinois. The Rock Island route leaves the main line near Green River crossing, leading west to Rock River, which is followed by slack-water to

near the mouth. The descent is 101 feet and the distance seventy-seven miles from the Illinois. The estimated cost of construction by the Marais d'Osier route is \$5,811,868; by the Rock Island route, \$6,709,886.

The American Engineer is our authority for the statement that the projected ship canal between Bordeaux, on the Atlantic, and Narbonne, on the Mediterranean, France, seems still to occupy the French mind. It would be a vast undertaking comprising, as it does, a length of 330 miles, to save a voyage around Spain of 700 miles at an estimated cost of \$190,000,000. It is stated that the plan also contemplates the construction of a railway track along its margin, so that by the use of locomotive towage a speed of seven miles an hour could be maintained by day and also by night by the aid of electric lights. Thirty-eight locks would be required, and the depth of twenty-seven feet would allow of the passage of heavy iron-clads.

The Canadian Government has asked for tenders for the construction of the Sault Ste. Marie Canal and for the enlargement of the St. Lawrence canals. The advertisement calls for the construction of a canal on the Canadian side of the river, through the Island of St. Mary. As for the St. Lawrence enlargements, tenders are asked for the construction of two locks and the deepening and widening of the upper entrance of the Galop's Canal; for the deepening and enlargement of the summit level of the Cornwall Canal; the construction of a new lock at each of the three lock stations on the Cornwall Canal between the town of Cornwall and Maple Grove; the deepening and widening of the channel way of the canal; the construction of bridges, etc. With the Canadian Sault Canal built, the St. Lawrence & Welland Canals enlarged, and the use of the St. Clair flats guaranteed by treaty, Canadian vessels will have a right of way from Lake Superior to the ocean.

The Advocate is compelled to admit that the canals have not made that creditable showing which we had a right to expect this season. From the opening of navigation to August 1 the total number of bushels of grain carried from Buffalo was 13,204,990, while last season up to that period 21,910,680 bushels had gone over the route. A poor export demand, bad canal breaks and a general holding off, owing to unusually poor freights offered by the scalpers, are the main cause of this decline. During July the shipments of canal grain from Buffalo amounted only to 3,598,260 bushels, against 6,895,860 bushels during July of last year. The breaks stopped traffic for twenty days. Notwithstanding all the talk of anti-canal men as to the railroads taking all the grain, it should be observed that rail shipments of lake grain for July were only 2,423,600 bushels, and since January 1, 13,523,710 bushels, or only about as much as the canal carried during the months. Freights have been disastrously low, and many boatmen have not as yet carried a bushel of grain. The aggregate receipts at Buffalo, says Wednesday's Courier, from the opening of navigation to date are 28,720,410 bushels, while last year, to the end of July, they were 39,188,350 bushels. Flour, however, shows a marked improvement; the month's receipts were 608,460 barrels against 561,450 barrels for July of last year, and this season 1,908,890 barrels against 1,548,990 barrels last season. While there has been a falling off in receipts of grain which did not go elsewhere, there has been a large increase in the receipts of iron ore which heretofore was discharged at other points. Up to yesterday afternoon 35,600 gross tons of ore were delivered here, against 13,110 tons for the corresponding period last season.

We are indebted to General O. M. Poe for the following records of St. Mary's Falls Canal including the statistics of its commerce during the month of July, 1888: Number and class of vessels through the canal: Steamers 930; sail vessels 381; rafts and unregistered craft 85; total 1,396. Total freight 1,156,842 tons; total registered tonnage 887,647 tons; number of passengers 7,893; number of lockages 663. Again the usual report is made that the business of the canal for the month was greater than for any other month in its history: the excess being 138,527 tons of freight, and 79,369 tons registered. On July 23, the freight tonnage was 58,648 tons, and on July 30 it was 65,354. The latter was 11,012 tons greater than the largest day's business in any previous year, namely, August 28, 1887, when 54,342 tons of freight passed the canal. The average daily freight tonnage for the month was 37,317 tons. The freight traffic was 188,113 tons larger than for the corresponding month last year. The total of this season's traffic of the canal to the close of July was 2,810,816 tons as against 2,535,193 tons for the same period last year, or an increase of 275,623 tons.

The British, Dominion and Provincial Governments have expended \$55,000,000 on Canadian canals, and it appears that the results are disappointing for that enormous outlay. In the work of deepening Welland Canal to a fourteen-foot draft it has recently been discovered that between Kingston and Cornwall, a distance of 100 miles on the St. Lawrence River, unlooked for engineering difficulties have appeared which may lead to the abandonment of the deepening projects. Recent surveys show that to blast a fourteen-foot channel through certain long stretches of the rock would cost four times as much as the government's estimate. The matter will be laid before parliament at the next session.

The Journal of Indianapolis, Ind., says: "Shipments of grain to Detroit and Sandusky are quite heavy, but the grain men in this territory have given the Toledo market the cold shake. The seaboard lines are forwarding but little grain."

## Fires, Casualties, Etc.

Meeske & Hoch's brewery at Negaunee, Mich., was recently destroyed by fire. Loss \$3,000; fully insured.

C. D. Van Wagenen, a prominent and highly respected member of the New York Produce Exchange, has died.

Louis G. Graff, a prominent grain merchant of Philadelphia, Pa., is lying very ill at his home in Riverton, N. J.

A large grain warehouse at McMinnville Crossing, Ore., was destroyed by an incendiary fire July 12. Loss \$4,500; insurance \$3,000.

Two grain elevators at Richmond, Minn., were struck by lightning on the night of Aug. 1. But little damage was done to the buildings.

The roof of the engine room of the Cairo Elevator at Cairo, Ill., was destroyed during a terrific wind and rain storm which visited that place Aug. 5.

J. M. Quinn's grain elevator at Newmarket, Iowa, was damaged to the extent of \$600 during a severe wind storm which swept over that place Aug. 2.

Hartmann & Fehrenbach's porter brewery at Silverbrook, a suburb of Wilmington, Del., was destroyed by fire July 16. Loss \$5,000; insurance \$1,500.

A small boy named Booth came near being suffocated in the grain elevator at DeSmet, Dak., one day recently. The spout was opened while he was playing in the wheat bin, and he was rescued just in the nick of time.

The large grain elevators in the vicinity of the Little & Croft Lumber Co.'s establishment at Evansville, Ind., had a narrow escape from fire during the burning of that plant Aug. 1. A providential shifting of the wind was all that saved them.

The Chicago Lumber Co.'s elevator at Waterville, Kan., was totally destroyed by fire a short time ago. The fire is thought to have been of incendiary origin. The building, which cost \$12,000, is a total loss, the insurance companies having refused to insure it, as an attempt had been made once before to burn it.

A most disastrous fire occurred at Lindsay, Ont., July 22, destroying the large storehouse owned and occupied by the firms of Dundas & Flavell Bros. and Sadler, Dundas & Co., grain and provision dealers. Fifteen thousand bushels of wheat and a large quantity of produce were consumed. Loss \$25,000; insurance \$20,000.

Bert Woodward, Farmer City, Ill., met with a painful accident while shoveling corn at the big crib in that city July 30. He became entangled in the machinery and one of his feet was drawn in in such a manner as to crush it badly. He will probably lose two or three of his toes, but the rest of his foot will not be permanently injured.

Isaac Eldridge, who for the past year has been identified with the Sibley Elevator Co. of this city, and for many years a prominent stock yards merchant, was prostrated by a peculiar stroke a few days ago, from which he cannot recover. Mr. Sibley, the active manager of the Sibley Elevator Co., is a son-in-law of Mr. Eldridge.

Donald Cameron, senior member of the commission firm of D. & D. S. Cameron of New York City, and for many years a member of the Produce Exchange there, died at his home in Brooklyn July 31. Mr. Cameron was torn in the West Indies, and at the time of his death was seventy-two years of age. His death was due to congestion of the lungs.

Elevator "A" at Peoria, Ill., owned by the Peoria & Pekin Union Railway Company, together with twelve or fifteen carloads of malt, was destroyed by fire Aug. 14. The elevator was insured for its full value, and there was \$5,000 insurance on its contents. The loss is estimated at \$125,000. The fire is supposed to have been of incendiary origin.

The elevator owned by the Minneapolis & St. Louis Elevator Co. at Madison, Minn., was struck by lightning July 21. Fire started in the cupola, and in half an hour the building was burned to the ground. Fortunately only 200 bushels of wheat were in the building. The loss is estimated at \$3,000. A heavy shower saved the Pacific Elevator, which was but a few feet away, from destruction.

Bingham Bros.' elevator at Kentland, Ind., was destroyed by fire July 18, together with a large quantity of grain. The elevator at that place owned by Thomas Brown of Chicago was also destroyed. The Brown elevator had a capacity of 100,000 bushels of grain, and was valued at \$10,000. About 15,000 bushels of grain were burned in this building. The Bingham elevator was valued at \$5,000, and was insured for \$3,500. A large amount of other property was also destroyed.

Dean Bros., Ava, Ill., have just completed a 40,000-bushel elevator in connection with their roller mill. The building is equipped with machinery of the most modern type, and the firm anticipate doing a big grain business.



## Press Comment.

### WE ARE A GREAT PEOPLE.

An investigator has discovered that more tonnage is transported through the Sault Ste. Marie Canal than the Suez Canal, which has long been upon the list of the wonders of the world. Of course, it has! This republic has more great things in a minute than the effete monarchies have in a day.—*Baltimore Herald*.

### BOSS TWEED'S QUESTION.

What are they to do? They cannot decently continue the suspension of the members and omit like punishment of a hundred or more whose offense is identical. And yet to suspend so large a number would cause as little embarrassment. Member after member admits without hesitation and seemingly without fear of the State's Attorney that he has violated not only a rule of the board, but also a penal statute of the state. What is to be done? The board that commenced disciplinary processes is paralyzed by the extent of the offense, and it is idle to ask the State's Attorney to interfere. Of what avail, then, are rules and statutes?

The board itself must settle this problem, and settle it in conformity with the law of the state. If it is unequal to the task of eliminating from its operations the gambling which is practiced despite its prohibition its usefulness is greatly impaired, and the correction must be applied by the state itself.—*Chicago Times*.

### CIRCUMSTANCES ALTER CASES.

A year ago the European milling journals were convinced that the Dakota and Minnesota hard wheats had deteriorated and were no longer so desirable as they were formerly. That was when the English millers could not hope to get enough of those wheats to grind. Now they have a supposed chance to buy those wheats, and they admit they are finest of the fine. The London *Miller* styles them now "the superb hard wheats of Dakota and Minnesota" and "these magnificent wheats," and the London *Millers' Gazette* frankly calls the Dakota and Minnesota wheats "this very desirable wheat" and "the best wheat in the world." We are pleased to see this change in tone, but we cannot forbear asking whether, in case the English millers fail finally to secure a large supply of Dakota and Minnesota hard wheats through the Scandinavian Elevator Company, they will again take up the "sour grapes" cry and deprecate the grain they are so enthusiastically praising now.—*Milling World*.

### THE BUCKET-SHOP DECISION.

No one who is not directly interested in bucket shop operations will deny that the decision is good logic as well as good law. The men who have sought to force the board to let them know all the price changes as fast as the same occur cannot plead a wish to make a legitimate use of them. During the many years the quotations were supplied the recipients employed them as a basis for betting, and nothing else. They were not made the means of moving a single ounce of produce from the producer toward the consumer, but simply as information on which they could rake in a sure profit as "bookmakers" for a lot of gamblers. There is no reason to suppose they would employ the quotations to any better purpose if the service were insisted upon for the future. In deciding against the claim the court has not only ruled in favor of the board as a party in litigation, but has acted far better for the interest of the community by refusing to give aid and comfort to those who have demanded assistance in breaking the laws and working for the demoralization of the community.—*Chicago Tribune*.

### STATISTICIAN DODGE.

It has been given out that this official is retained in office because the bureau (commonly called department) of agriculture at Washington cannot get along without him. If that is a sufficient reason the country should be devoutly thankful that his indispensable life is spared. In case he should be removed from this mundane sphere of activity the machinery of the bureau would come to a standstill, and there is no telling what dire consequences would ensue if he is really the only man connected with the government who cannot be spared.

But there is some reason to believe that the bureau could survive if his services were dispensed with, and that a man even more competent might be found to take his place. Errors of an inexcusable character have more than once been detected and exposed in his statistics, and in some respects his reports are unnecessarily and seriously misleading.

For instance, he reports the totals of cereal crops in bushels, giving the impression that they are commercial or weighed bushels, and it is only long after the first publication of the totals that it appears from the published volume of the bureau that he is talking about measured bushels. Dealers everywhere understand a bushel of wheat to be sixty pounds, and they naturally understand that the statistician means sixty pounds when he speaks of a bushel unless he expressly states that he means measured bushels.

Mr. Dodge originally reported the wheat crop of 1887 at 456,329,000 bushels. Dealers naturally supposed, as he offered no explanation, that he meant bushels of sixty pounds. But on page 543 of the volume for that year is a total showing that he meant measured bushels, which averaged but fifty-eight and one-half pounds to the bushel, and that the actual crop, stated in bushels of sixty

pounds, was 445,047,538, or about 11,300,000 bushels less than the number originally given out for the information of the public.

Now, it may be that Mr. Dodge would not fairly have been expected to give an early estimate of the number of commercial bushels. But he might have been expected to state what he meant. He should have said that his estimate was in measured bushels, and might be excessive. He might have given what information he possessed as to the average weight of the measured bushel, or if he had no information upon that point he might have said so. Such facts seem to indicate that the services of Statistician Dodge are not absolutely indispensable.—*Chicago Times*.

### DEPENDENT SPECULATION.

Speculation is an element which cannot be eliminated from the business world, nor is it desirable to do so. It is at once an indication of the prevailing sentiment and a factor which makes that sentiment effective in promoting business activity. It discounts the future only after a due consideration of present known conditions, and it selects its objects with care and judgment, which the great interests involved render necessary. Any condition of affairs which does not allow a basis for speculation is an unhealthy one. For it is nothing but speculation which removes business from the realms of mere hand to mouth trading to a broad basis of confidence in the future. It is speculation which induces manufacturers, jobbers and dealers to largely increase their stocks to meet future anticipated requirements, and when the conditions and prospects do not justify such course, business is sure to be bad. The grain business, the lumber business, and business in other departments where legislation is liable to affect their conditions at any time, are bad, simply because speculation, except that of the reckless type, has no reasonable fixed basis upon which to operate. The manufacturer will not lay in a stock beyond present requirements, and the dealer will not buy freely from the producer until the outside conditions, which may arbitrarily affect the prices, are in a measure settled. And the same principle applies to other articles which may be affected. It is only where conditions are reasonably staple that speculation has a fair field for its intelligent operation.—*St. Louis Merchant, Miller and Manufacturer*.

### THE CANADIAN CANAL TOLLS.

The upshot of the affair is not unlikely to be the abolition of all tolls on the Welland and St. Lawrence canals. Why not? There is something foolish in the logic which expends thirty or forty millions in making canals that are not expected to earn a dollar on interest account, and goes on to charge tolls that do not pay for management and maintenance. Last year the total cost of "maintenance and repairs" for the Welland and St. Lawrence canals was \$364,887. The tolls taken were \$217,116. The latter sum would be lost by making the canals free. It amounts to the interest on about \$6,500,000, which sum, had it been required for construction in addition to the prime cost of the canals, would not have hindered their construction. By what argument can the collection of trifling tolls be made to accord with the theory on which the canals were built, viz., that the country is indirectly paid for direct loss in cheapening water transportation? Railway companies might complain were the tolls abolished, but would they have reason to? Is it not a fact that the difference saved to forwarders and producers would not be enough to divert to the water route traffic that would otherwise use rail? It may be said that \$217,116 a year is worth saving; but again, what about the doctrine that cheapening of transportation is worth more than its cost. The effect of tolls abolition would be to lessen the existing "discrimination" in favor of the St. Lawrence route, but there would still be some temptation on its behalf, and there would be no excuse left to the Americans for "retaliating" at the St. Clair Canal.—*Toronto Globe*.

### THE OUTLOOK FOR LEADING CROPS.

The corn crop has maintained its favorable position and promise, the past week. High temperature has been favorable, and there is no important lack of moisture in any considerable breadth in the West. Local rains have afforded benefit in many districts. In portions of Kansas there is reported need of rain, and some injury from hot winds, but the extent of such drawbacks is not serious. The oats crop has suffered quite considerably in the West from effect of storms which prostrated the grain, occasioning a lighter yield and depreciating the quality, compared with what otherwise would have been realized. So large a proportion of the crop, however, has had no important drawbacks of this kind that the outlook still justifies expectation of the largest production on record. A good rye crop appears to have been secured, while barley is only fair in production and quality, and flax indicates a fairly good outcome. A large hay crop has been secured in generally good condition. Spring wheat regions are affording rather more of complaint, and reports are not so uniformly favorable; rust is more widely spoken of, with indications of more or less injury resulting to the maturing grain. The general average position of the spring wheat crop appears to have slightly deteriorated, and calculations on production exceeding last year, for this portion of the wheat crop, will not unlikely lead to disappointment. The excess in yield of winter wheat in some districts in the southern range of this belt, as compared with previous expectations, appears to be fully balanced by deficiencies in yield and quality in the more northern localities, so that there is no ground for enlarg-

ing calculations for this portion of the crop, as compared with expectations a month or six weeks ago.—*Cincinnati Price Current*.

### THE SCANDINAVIAN ELEVATOR COMPANY.

Since the unfortunate and inopportune failure of C. C. Walcott, the enemies of the Scandinavian Elevator Company have taken every means to give out the impression that the company had collapsed. Ardent "friends of the farmer" among the newspaper fraternity were quick to record the "we told you so" and without further inquiry denounced the officers and company alike, warning farmers to have nothing to do with them. Farmers of the Northwest can be sure that this advice comes from the Millers' Association and marked copies of papers containing their strictures on Mr. Louck's efforts, generally find their way to the office of the president or secretary of the association. Farmers are not obliged to take stock in anything that is not open to investigation. If the Scandinavian Elevator Company can rob the farmers any better than the present railroad elevator system, the Scandinavian Company's methods would be received with open arms by the present manipulators and mixers of No. 1 hard. That's what they have been puzzling their brains about, and most farmers will admit that if any system of robbing ever reached a point where "fine Italian hands" were at a premium, it is in the present elevator and millers' ring of the Northwest.—*Northwestern Farmer and Breeder*.

### SOMEWHAT ANOMALOUS.

The reduction of crop areas in a country increasing in population over 2 per cent. per annum is doubtful and difficult to realize. A backward movement is not a national habit. Our correspondents often fail to report full acreage, because they do not consider the element of increase of population, giving only their views of relative areas on established farms, and omitting the increase in number of farms. This is cause of serious deficiency in the states and territories where settlement is active. It was assumed that low prices of wheat would reduce the area. Last fall the returns of acreage indicated almost a full breadth of winter wheat. The losses of winter killing are discounted in two ways: by substitution of other crops, and by a reduced condition for the acreage standing. The pessimist—and the bull of the wheat pit is a sample of the most pronounced type—cuts down acreage to discount all damage, and then reduces condition to discount it all over again. In this way he scores a disagreement with our level headed and judicious resident reporters. But a higher degree of confidence should naturally be awarded to practical estimates mathematically consolidated than to those of panic-stricken travelers, who catch fugitive glimpses of fragmentary wheat fields between the railway cuts, in views that are vanishing at the rate of forty miles an hour.—*Statistician J. R. Dodge*.

### IMPORTANCE OF WATERWAYS.

It is true that the methods of the railway system have very much diminished the magnitude of water transportation. Both by competing with water routes at exceptionally low rates—so low as to provoke the long and short haul clause of the Inter-State Commerce Law—and by making through rates which exclude water routes from pro-rating, a great deal of traffic has been taken from the rivers. But on traffic that cannot be controlled in that way it is still certain that water transportation furnishes the cheapest method for staples that have to be carried in vast bulk, and on which rapidity is not an object.

Thus the Ohio River takes more coal from Pittsburgh in a single direction than the railways carry in all directions, and does it on about a quarter the railroad charge. The Erie Canal and the lakes carry half as much grain and breadstuffs to New York in seven months as all the railroads do in twelve, and the charge, up to the abolition of tolls on the New York canals, was about one-third that of the railroads. The Sault Ste. Marie passes a tonnage as great as that of the Suez Canal; and the Detroit River bears every year a tonnage equal to that of the Mississippi and Ohio rivers.

Senator Vest is wrong. The day of water transportation has not gone by, and will not while it affords the cheapest method of moving large bodies of freight and is open to the free competition of all carriers.—*Pittsburg Dispatch*.

## To Poultry Raisers.

*The Complete Poultry Manual* is a neat little work which is well worth reading by those interested in poultry, or by boys or girls who want to turn an honest penny. The price is only 25 cents. Sent postpaid on receipt of price. Address

**MITCHELL BROS. CO.,**

184 Dearborn Street, Chicago, Ill.

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A good miller with some capital, to put in a steam flour and custom mill, from fifty barrels and upward capacity, in a good town of 2,000 inhabitants. A good chance for a fine trade. Receipts of good grain are heavy. A fine location to be had near a large elevator on railroad track, that would allow handling grain for the mill from all points at a fair margin. Address

STEAM FLOUR AND CUSTOM MILL, care AMERICAN ELEVATOR AND GRAIN TRADE, Chicago, Ill.



**For Sale.****FOR SALE.**

One Kurth's Double Cylinder Cockle Mill. New. Price at Montevideo \$150. Address

J. A. CASE, Montevideo, Minn.

**FOR SALE.**

Elevator in good wheat country. Capacity 10,000 bushels. Owner going into other business. Address

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**FOR SALE.**

One Acme Automatic Oil Engine of two-horse power. Used one season. In good order. For price and full particulars address

P. C. HOWELL & Co., Newark, Dak.

**FOR SALE.**

Two Cutler Steam Grain Driers (largest size), very little used and in good condition. Suitable for drying either grain or meal. Address

IOWA ELEVATOR Co., Peoria, Ill.

**FOR SALE.**

Elevator in good corn and oat country. Capacity, 10,000 bushels; crib room, 30,000 bushels. Good reasons for selling. Address for full particulars

BURKE & GRAHAM, Kirkman, Iowa.

**FOR SALE.**

Six good grain points with one horse power elevator, warehouses, offices, scales and cribs, everything complete and in good running order. Honorable competition. For further particulars address

CLINES & MOORE, Panora, Iowa.

**FOR SALE.**

A good little elevator and feed mill on the I. & St. L. R. R., in a wheat and corn country. The prospect for corn was never better. Reason for selling is, I have not the money to run it successfully. Will sell cheap. Parties wishing to buy, address

P. O. Box 177, Irving, Ill.

**FOR SALE.**

Three good grain points in Nebraska. Elevators complete. Good corn and oats country. Rare chance for good, paying business. Can ship to Chicago, St. Louis, Cincinnati, and all Eastern and Southern markets on through billing. Prospects are good now for the largest crop ever known. Good reasons for selling. For full particulars address

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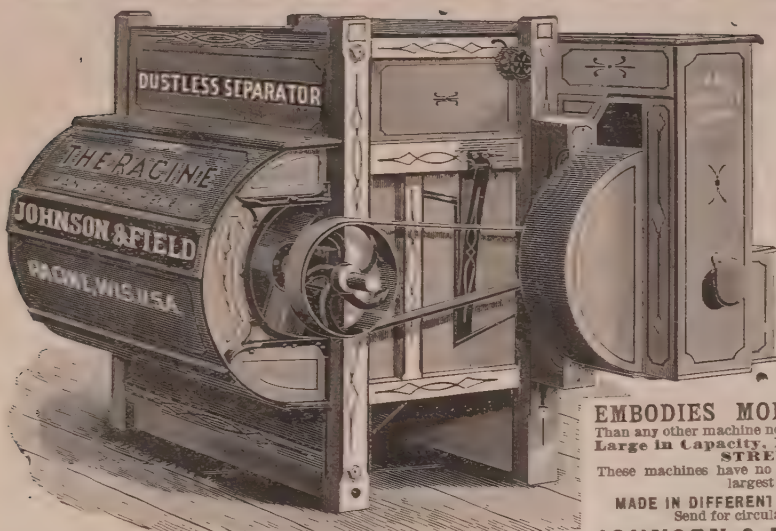
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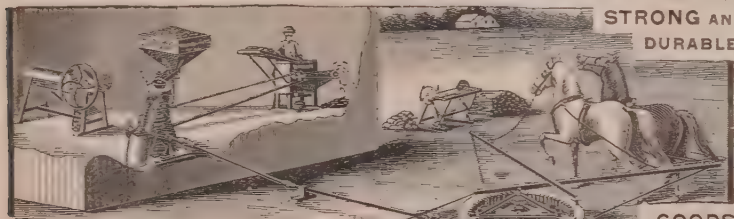
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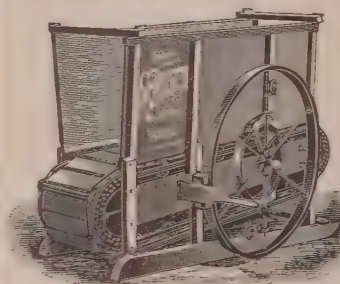
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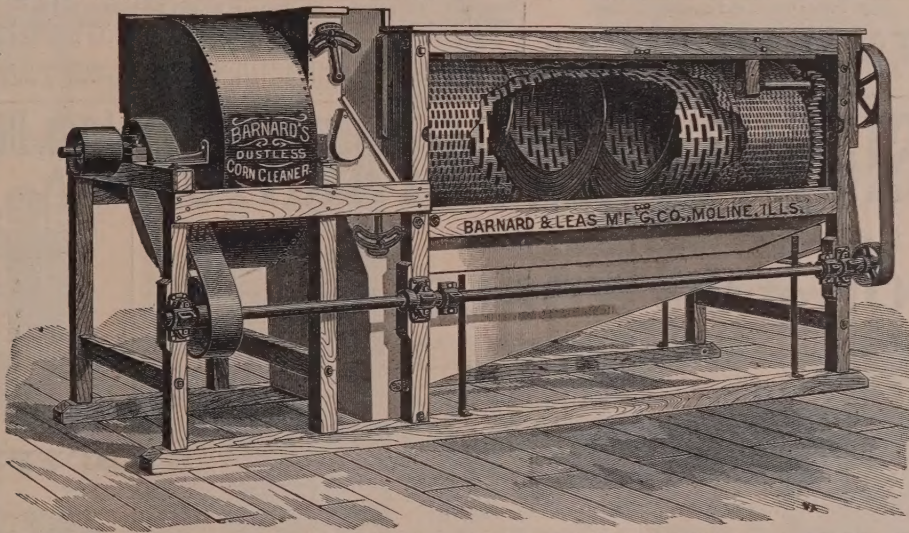
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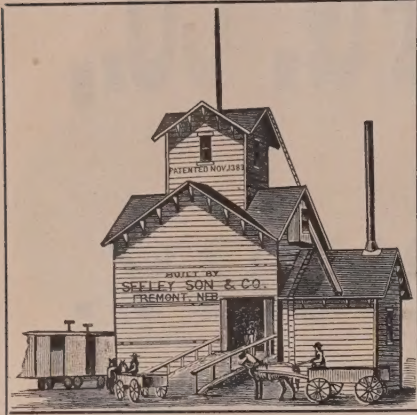


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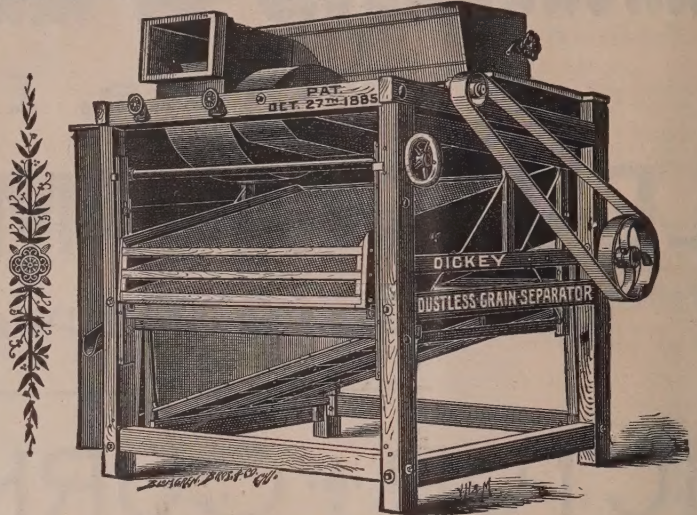
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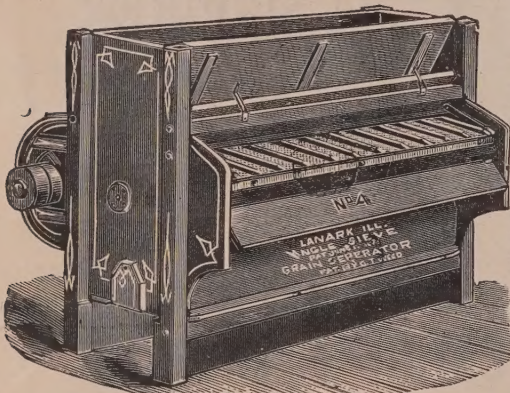
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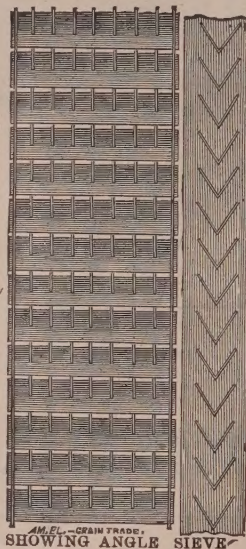


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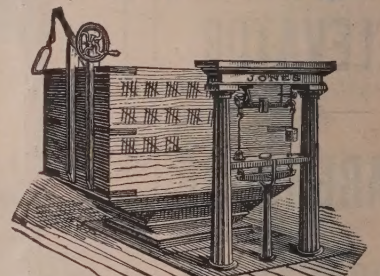
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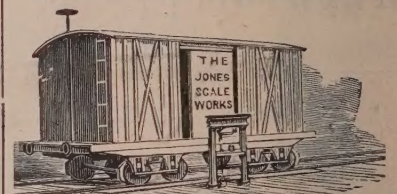
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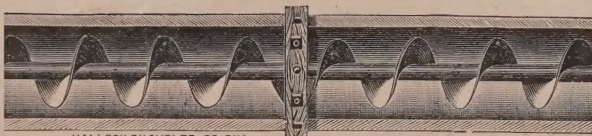
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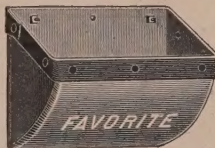
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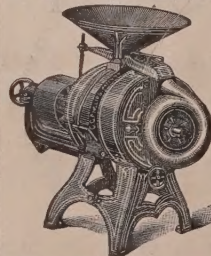
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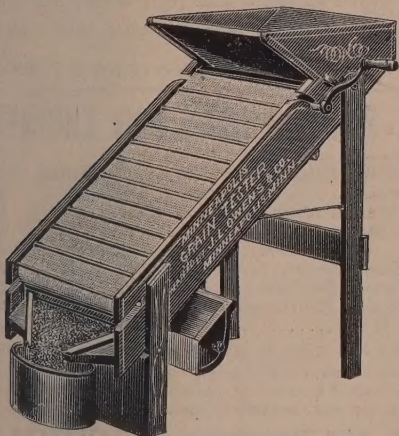
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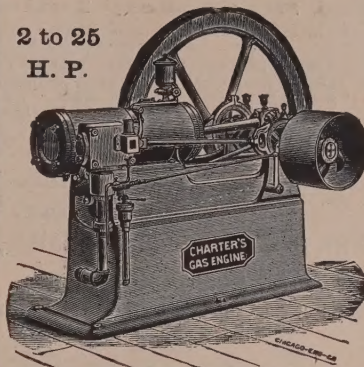
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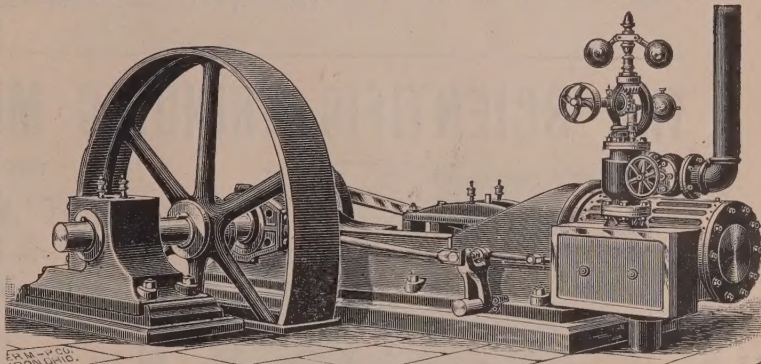
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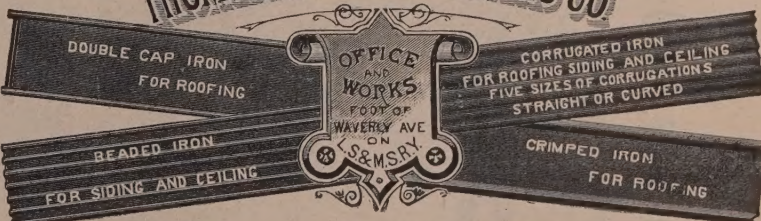
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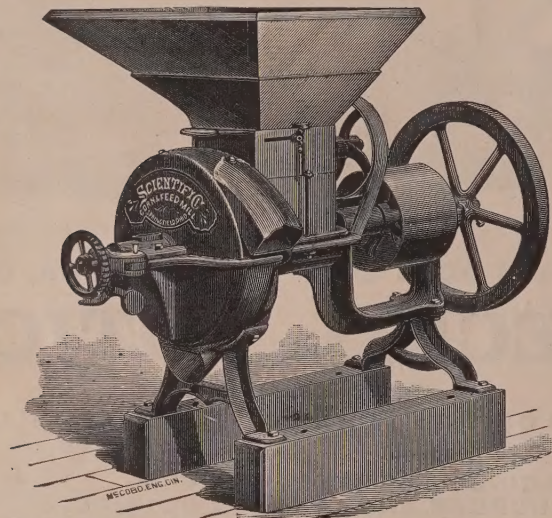
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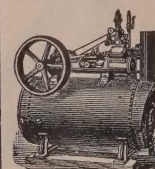
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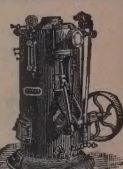
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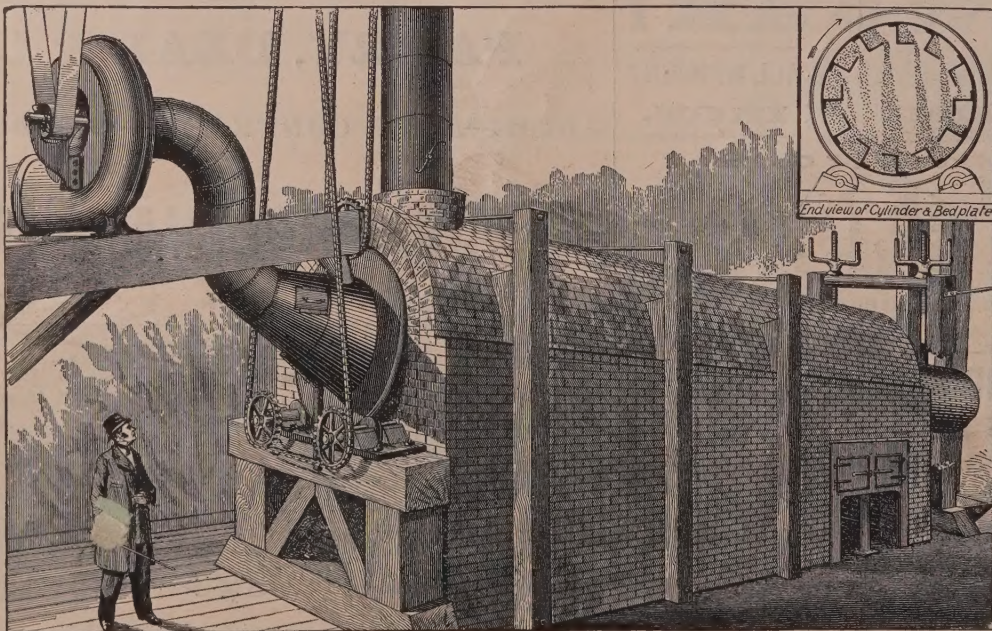
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